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ABSTRACT

Among the major objectives of this study was the determination of the nature and extent of disparities in revenues and expenditures among a group of selected states, and among type of districts within and across these states. A common pattern in education finance characteristics was found within each type of district, particularly among central cities. Suburban districts--although they have the widest variations in characteristics of any type of school district--generally follow a common pattern when they are grouped together. Sharp differences were also found from state to state in the share of educational costs borne by different income groups, ranging from roughly proportional tax burdens to highly regressive. The disparity analysis is an attempt to provide an overview of the existing structure of education finance and the causes for inequalities in both dollar expenditures and resources. An additional objective of the disparity analysis was to provide basic statistical data for examining alternative tax and distribute approaches as well as specific allocation formulas. Some of these alternatives are: (1) state matching grants based on fiscal capacity, (2) equal dollars for equal tax effort, (3) educational need grants, and (4) state assumption of costs for specific functions. (For related document, see ED 058 473.) (Author/CK)

PUBLIC SCHOOL FINANCE: PRESENT DISPARITIES AND FISCAL ALTERNATIVES

Volume I

Prepared by The Urban Institute

Submitted to The President's Commission on School Finance

THIS IS ONE OF SEVERAL REPORTS PREPARED FOR THIS COMMISSION. TO AID IN OUR DELIBERATIONS, WE HAVE SOUGHT THE BEST QUALIFIED PEOPLE AND INSTITUTIONS TO CONDUCT THE MANY STUDY PROJECTS RELATING TO OUR BROAD MANDATE. COMMISSION STAFF MEMBERS HAVE ALSO PREPARED CERTAIN REPORTS.

WE ARE PUBLISHING THEM ALL SO THAT OTHERS MAY HAVE ACCESS TO THE SAME COMPREHENSIVE ANALYSIS OF THESE SUBJECTS THAT THE COMMISSION SOUGHT TO OBTAIN. IN OUR OWN FINAL REPORT WE WILL NOT BE ABLE TO ADDRESS IN DETAIL EVERY ASPECT OF EACH AREA STUDIED. BUT THOSE WHO SEEK ADDITIONAL INSIGHTS INTO THE COMPLEX PROBLEMS OF EDUCATION IN GENERAL AND SCHOOL FINANCE IN PARTICULAR WILL FIND MUCH CONTAINED IN THESE PROJECT REPORTS.

WE HAVE FOUND MUCH OF VALUE IN THEM FOR OUR OWN DELIBERATIONS. THE FACT THAT WE ARE NOW PUBLISHING THEM, HOWEVER, SHOULD IN NO SENSE BE VIEWED AS ENDORSEMENT OF ANY OR ALL OF THEIR FINDINGS AND CONCLUSIONS. THE COMMISSION HAS REVIEWED THIS REPORT AND THE OTHERS BUT HAS DRAWN ITS OWN CONCLUSIONS AND WILL OFFER ITS OWN RECOMMENDATIONS. THE FINAL REPORT OF THE COMMISSION MAY WELL BE AT VARIANCE WITH OR IN OPPOSITION TO VIEWS AND RECOMMENDATIONS CONTAINED IN THIS AND OTHER PROJECT REPORTS.

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PUBLIC SCHOOL FINANCE:
PRESENT DISPARITIES AND FISCAL ALTERNATIVES

VOLUME I

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A Report Prepared for the President's Commission on School Finance

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This report was prepared by The Urban Institute for the President's Commission on School Finance, and is part of a larger study in education finance currently underway at the Institute.*

*This larger study will be published by The Urban Institute in the summer of 1972.

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and in many other ways helped pull this report together.

While we gratefully acknowledge the assistance, advice and criticism we obtained from our consultants and advisory committee members, we alone assume full responsibility for the analyses and interpretations that follow.

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CHAPTER I

INTRODUCTION

During the twentieth century in America, public education has been drawn more and more into the problems which the society around it has generated, intensified, and accelerated to levels of urgency. Whether the problems are labeled political, psychological, social, economic, or otherwise, the schools remain the creation of society and are supported in the same webs which society has spun for its own support. Thus the problems and expectations of society at large become, in turn, the problems and expectations which the schools for society's children must recognize, adapt, and cope with in the search for educational solutions. Since many of the problems of education have either an economic base or a strong economic bearing, and since school financing is an area most urgently in need of a careful analysis combined with a presentation of feasible alternatives, it is to this that the present study has devoted its efforts.

I. THE PROBLEMS OF SCHOOL FINANCE

In overview, the current problem of school finance must be seen in the light of several subordinate problems. First, the revenues for public elementary and secondary education are already inadequate and are becoming more so at an alarming rate. Second, there are severe inequalities in per pupil expenditure levels and in educational services. And third, intimately related to both of the above, the tax burden for the support of public education is unequally shared and has led to growing doubt and resentment among taxpayers.

Inadequacy of School Revenues. Of the above problems, the "crisis" in school finance has received most of the attention, at least until relatively recently. Numerous newspaper articles have reported recently on the cut-backs in educational services, the reduction of staff, and even the temporary closings of schools necessitated by loss of anticipated revenues either through cut-back of state funds or the defeat of proposed new tax levies at the polls. The costs of education have been rising astronomically and have placed tremendous pressures on the slowly-expanding local property tax system, the major source of education revenues in most states.[1/] The demand for property tax relief is increasing. Tax overrides and school bond issues are being defeated more and more frequently. The so-called "taxpayers' revolt" may in part be due to non-economic reasons,[2/] but the substantial increases in property taxes for schools and in taxes generally, at a time of growing inflation and unemployment, is undoubtedly a major factor. Thus, there are growing pressures to find alternative

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[1/] Between 1959-1960 and 1969-1970, expenditures for primary and secondary education have risen at an average rate of 10.1 percent. National Education Association Research Report 1969 R-15. Between 1961 and 1969, average annual increases in the Locally assessed property value were only 4.6 percent. 1967 Census of Governments, Taxable Property Values. This difference between cost of education and the rate of expansion in the property base has resulted in increased tax rates for schools.

[2/] James M. Buchanan, "Taxpayer Constraints on Financing Education," in Economic Factors Affecting the Financing of Education, editors, Johns, Goffman, Alexander, Stollar, Gainesville, Fla.: 1970, p. 265, suggests that among the factors explaining the basic shift in the preferences of taxpayers are the "direct interrelationship between racial strife and educational process, the disruptive behavior of the student radicals, and the observed efforts to convert schools into centers for social reform." p. 287. The lack of accountability for pupil performance on the part of the schools in the face of continuing demands by school officials for new funds has also "turned off" taxpayers.

revenue sources to the local property tax for the financing of education.

Inequalities in the Distribution of School Revenues. The disparities in per pupil spending levels, as well as disparities in tax burdens, are now receiving increased recognition on the part of the courts and legislatures. Three courts, one state and two federal,[3] have recently found that state school financing systems which depend substantially on local property taxes result in "wide disparities in school revenue" [4] among school districts, and have held that such a financing system is therefore in violation of the equal protection clause of the Fourteenth Amendment. The focus in these cases was not only on inequalities in the distribution of revenues but on inequalities in tax rates as well. It was pointed out that often districts with low tax bases were taxing themselves at a much higher rate than wealthier districts, yet the level of expenditures per pupil in the poorer districts was still well below that of wealthier districts.[5]

Disparities among districts in expenditure levels seem to bear little relation to differences in the cost of services provided or differences in the types of pupils to be educated. Recognition of these inequalities comes at a time of increasing pressures for more than equal resources for the educationally disadvantaged who, it is argued, need additional resources to compensate for inadequate socio-economic family backgrounds and to bring them up to a level where they can compete on an equal basis in society.[6]

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[3] Serrano v. Priest, __ Cal. 2d. ___ (1971); Van Dusartz v. Hatfield, ___ F. Supp. ___ (D. Minn 1971); Rodriguez v. San Antonio Independent School District, ___F. Supp. ___ (W.D. Texas 1971).

[4] Serrano v. Priest, supra, at _____.

[5] "...affluent districts can have their cake and eat it too: they can provide a high quality education for their children while paying lower taxes. Poor districts, by contrast, have no cake at all." Serrano v. Priest, supra, at _____.

Variations in per pupil expenditures and in educational services exist on at least three levels: (1) inter-state, (2) intra-state, and (3) intra-district (and perhaps within the school and even within the classroom). This report focuses principally on intra-state differences. One of the principal objectives of this study is to develop alternative state distribution formulas which would lessen disparities in per pupil expenditures among school districts within a state. A second parallel objective is to develop alternative state (and local) revenue sources which would lessen disparities in tax rates among districts and in the burden for the support of public education among income classes within a state. However, this report also makes some significant inter-state comparisons and undertakes a preliminary examination of school-by-school spending differences within several selected districts. In view of the primary emphasis on intra-state inequalities, a brief description of some of the causes is presented below.

Reasons for Intra-state Inequalities. In forty-nine states, Hawaii being the exception, the financing of the schools in a joint enterprise of the state and the local school districts. That is, some funds come directly to the district from state-level sources and the balance (except for a minor amount of federal funds) from local-level sources. The financing system in most states relies heavily on the local property tax to fund education.

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[6] Two neighboring school districts, located in Michigan, illustrate the nature of the inequalities that has aroused such concern: the district of Dearborn, in 1968-69, had 495 percent more property wealth per pupil than the district of Inkster, and taxed itself at a rate that was 12 percent less than that of Inkster to raise 455 percent more funds. Inkster, however, has 480 percent more disadvantaged students, as measured by the criteria of Title I of the Elementary and Secondary Education Act, and it has an enrollment that is 84.1 percent minority compared to a minority enrollment of 1.1 percent in Dearborn. Yet even with a per pupil property wealth of $70,360, generating $960 per pupil in local revenues, Dearborn received $141 per pupil in state aid.

1. Local

Local property taxes are the principal source of education revenues in most states. Inequalities in revenues generated by use of this tax for education among the districts are the result--due to differences among districts in property values per pupil, differences in type of property, differences in tax rates, and inequitable property assessment practices.

2. State

Recognizing the basic inequalities in the capacity of school districts to raise revenues, and the difficulty some school districts have in raising sufficient funds for even a "minimum" program, states have provided funds to school districts to supplement the locally raised revenues. State funds have been distributed either as a flat grant to school districts or through a formula which attempts to equalize on the basis of the ability of a district to raise local revenues, usually as measured by property wealth, or a combination of the two approaches. However, in no state, as this study will show, does the distribution of state aid eliminate the disparities among districts.

The majority of the current state education aid formulas which allocate funds to districts are inadequate from a number of standpoints:

- By and large, the formulas maintain the heavy reliance on the local property tax, since in most states less than half the necessary funds are provided by the state. This results in inequalities due to differences in underlying tax base, assessment practices, and tax rates.

- Many formulas provide a flat grant to all districts regardless of fiscal capacity -- helping to maintain the gap between wealthier and poorer districts.

- Differences in costs among districts for the same service are not taken into account in most distribution formulas.

- Inadequate measures of fiscal need are incorporated in the formulas -- the measure principally utilized is property wealth but, as will be shown, property wealth is not necessarily related to income.

- The existing distribution formulas generally do not take into account factors relating to the higher cost of educating certain types of children.

The flat grant personnel unit formula utilized by Delaware, North Carolina, and South Carolina, which permits unlimited local supplementation, presents other problems.

- Such a formula may lock the state into a manpower approach to education, with little leeway provided for utilizing new technology or other non-manpower approaches to education.

- Local flexibility in the allocation of personnel may be limited -- that is, a district cannot substitute two teachers' aides for a teacher.

- The unlimited local supplementation of the state grants, through the use of the property taxes, exacerbates differences among districts -- especially between the affluent suburbs and rural districts.

By and large, the goal of the "equalizing" state grants, even though they have not come close to attaining it, has been fiscal equalization. But this objective, even if it were to be met, is coming increasingly under attack. The concern for the educationally disadvantaged is forcing reformers to look for measures of education need, the use of which might mean "positive inequalities" which would favor the disadvantaged. Arguments for moving in this direction assume that greater educational resources should be focused on students with greater educational need, despite the fact that the evidence is mixed regarding additional resources and improved student achievement.

Issues in Developing Alternatives. Among the underlying issues in education finance are (1) how much should be spent for education, (2) how should funds or real resources be allocated among districts or pupils, (3) who should pay for the support of public education and, (4) what is the appropriate balance between state and local responsibility for the support of education?

To answer the first question, one must have some insight into the value society places upon education relative to other services. To answer the second question, one must know how equality of opportunity is valued by society. Moreover, how should equality of opportunity be defined? It has been suggested by some that equal dollars expended per pupil, regardless of his location in the state, would be sufficient to meet the goal of equality. However, equal dollars may mean unequal real resources, since the costs for the same services (such as salaries for teachers of equivalent education and experience) or the need for different services (such as transportation) may vary widely among areas of a state. The objective of equalizing expenditure levels also conflicts with the goal of providing more resources to the disadvantaged. Thus the issue is whether equalization means equality only as measured by equal per pupil expenditures -- or even equal per pupil expenditures adjusted for the cost differences referred to above -- or whether it includes compensating for various learning disabilities, including those resulting from low socio-economic background. Under the latter approach, equalization means directing more educational services to the disadvantaged, the ultimate objective being equal educational outcomes, at least in terms of the fundamental skills.[7/] And if equal educational opportunity is defined as maximizing every students' potential, a good case can be made for giving additional resources to superior students. So the problem of goals is complex and far from resolved.

[7/] "...equality in the resources devoted to the education of children of different racial groups will not achieve equality of educational opportunity ...", S. Bowles, "Toward Equality of Educational Opportunity?" Harvard Educational Review, Vol. 38, 1968, No. 1, p. 90. "...the state's obligation to provide an equal educational opportunity is satisfied only if each child, no matter what his social background, has an equal chance for an equal educational outcome, regardless of disparities in cost or effort that the state is obligated to make in order to overcome such differences." D.L. Kirp, "The Poor, the Schools, and Equal Protection," Equal Educational Opportunity, Harvard Educational Review, Harvard University Press, 1969, p. 140.

More importantly, however, neither the question of how much should be spent for education nor the question of how funds should be distributed can be answered without some knowledge of the relationship between dollars and resources expended and educational outcomes. Unfortunately, the present state of knowledge about this relationship does not permit definitive answers.

The third question -- who should pay for public education -- focuses on the issue of equality in bearing the costs of education, both among districts and among income groups. Some communities with low per pupil property wealth have to tax themselves at a much higher rate than wealthier communities to support educational services at a similar level. Moreover, with the heavy reliance on the property tax in many states, the lower income groups are paying a higher percentage of their income for education than are the higher income groups. This third question thus requires some awareness of the extent to which society favors the redistribution of wealth from higher income to lower income groups and from more affluent areas of the state to poorer areas.

Finally, the last question -- the local-state role in financing education -- involves some insight into the importance of local district autonomy and fiscal independence.

All four questions are normative. This study does not purport to deal with these issues that are always just beneath the surface of the financial issues. This study confines itself to pointing out problems in the current fiscal structures and to developing some alternative mechanisms of financing education. The advantages and disadvantages of these alternatives in terms of various goals -- for example, equalizing dollar expenditures among school districts, preserving local autonomy, raising the average level of per pupil expenditures for education, and so forth -- will be described, and the impact which these alternatives are likely to have on states and on types of districts within states will be demonstrated. To show these options is not necessarily to endorse them. Their value lies in being able to give policy makers a more informed view of the present situation and of potential changes.

II. OBJECTIVES AND FINDINGS OF THE STUDY

The research undertaken by the Urban Institute for the President's Commission on School Finance had as its objective the development and testing of several possible new revenue sources and distribution formulas geared toward lessening disparities among school districts in per pupil expenditures and in tax burdens.

A. ANALYSIS OF EXISTING DISPARITIES (Chapter II)

A prior step to the development of alternatives to the present system is a precise understanding of the current system for financing education, how it contributes to the disparities, the nature of the disparities and the populations affected by them. This study, therefore, provides a detailed analysis of the disparities in per pupil revenues and expenditures within states, and of the combined state-local tax burdens for the support of public education. While dollar disparities in per pupil spending for education among school districts have already been well documented by others, the real question is whether disparities in dollars mean equivalent disparities in educational resources. Chapter II examines how differences in spending for various functions such as transportation, plant operation, instruction, and administration contribute to the overall disparities in per pupil spending among school districts. Differences in costs for the same function -- with particular emphasis on teacher costs -- are examined.

Analyses were also undertaken of revenues by source of funding -- that is, local, state, and federal -- to determine their impact on disparities in total per pupil revenues among districts. In addition, an effort was made to discover whether the proportion of state funding to total non-federal education revenues has a bearing on the magnitude of the disparities among districts. The objective was to determine whether states with a high percentage of state aid have a lower level of disparities among school districts than states with moderate and low proportions of state aid. If this were found to be true, the question then would be whether the lower disparities can be attributed to the formula through which state funds are distributed in those states or to the level of state funding, regardless of the nature of the formula.

Under the assumption that greater educational resources should be focused on students with greater educational need -- as defined in terms of educational underachievement, poverty, and minority group status (even though it is not known how much educational resources, and of what kind, are necessary to improve performance levels of low-achievers) -- an attempt was made to document the degree to which current school revenue allocations correspond with the proportion of these pupils by district.

Chapter II also examines the nature of the burden for the support of public elementary and secondary education -- that is, who pays for education. Comparisons are made of the tax burden borne by selected income groups between urban and rural areas within states as well as among states.

Summary of Findings: Chapter II

(1) States with high percentages of state aid as a share of total

state-local school funding tend to have lower inter-district disparities than states with moderate levels of state funding. However, expenditure differentials remain even in high aid states, since the more affluent school districts often supplement state aid substantially.

(2) Differences in the levels of local revenues among school districts are the primary cause for intra-state revenue differentials. In all states examined, the addition of state funds reduces the relative revenue differentials between districts. Although federal funds, with some exceptions, further reduce disparities, their overall effect is not significant because the amounts are relatively low.

(3) Central cities have consistently higher per pupil property values, in part because of the presence of a larger commercial-industrial base than other types of districts, but they generally have lower per capita income than suburban districts. Cities generally have lower property tax rates for schools than do the suburbs. However, they have a higher total tax rate because of high other public services not generally found in suburbs.

(4) Rural districts generally have the lowest average property values of any of the areas within a state. They also have a much lower per capita income relative to property value than do suburban districts of similar property value, and thus are less able to tax themselves at as high a rate.

(5) Suburbs often do not have the commercial/industrial base that central cities have to draw upon, thus placing the major tax burden for the support of education on the homeowner and, indirectly, on the renter.

(6) Central cities generally have higher total per pupil expenditures, and provide more revenue from their own sources compared to the average of suburban districts. Much of this goes toward higher teacher salaries, resulting from a higher proportion of experienced teachers in central cities compared to suburbs. However, there are sharp differences among the suburban districts in almost all states, and the affluent suburbs spend more than central cities.

(7) Rural areas spend consistently less than other types of districts, primarily because of differences in salaries for instructional personnel, greater pupil-teacher ratios, a lower proportion of teachers with advanced degrees, and lower plant operation and maintenance costs.

(8) Differences between urban and rural areas in per pupil spending are due almost exclusively to differences in instructional expenditures and fixed charges for teacher benefits. Non-instructional expenditures show little variation within a state.

(9) Central cities with higher percentages of minority students tend to have high expenditures relative to other cities, while rural areas with high percentages of minority students tend to have lower expenditures than other rural areas.

(10) Tax burdens for the support of education by income group vary sharply among the states examined. In three states, the combined state-local tax structure is regressive. In the balance of the states, taxes are highest for the lower and highest income groups, lowest for the moderate income group.

(11) School taxes as a percentage of income vary substantially among the states examined. For example, tax rates in New York for the support of public education are 37 percent higher for low income groups and 125 percent higher for the highest income groups compared to New Hampshire's tax rates for these income groups.

B. DEVELOPMENT OF ALTERNATIVES (Chapter III)

To assist the President's Commission on School Finance in making its recommendations in education finance, the Urban Institute designed and tested alternative ways of both raising and allocating funds at the state level.[8] Chapter III presents the various options for financing education and analyzes the impact that each might have. An overview of that follows.

1. Alternative Revenue Sources

A number of tax sources for education revenues that could be substituted for the local property tax were examined. These new taxes were analyzed to determine the following: the rate at which such a tax would have to be imposed to raise the same amount of revenues now raised through the local property tax; the transfers of revenues among types of districts; and the impact on tax burdens of these alternative tax sources.

The new state taxes examined include a statewide property tax; a statewide tax on commercial-industrial property, letting local districts continue to tax residential property; a state sales tax; and a state income tax. Local taxes examined include income and sales taxes.

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[8] This study is confined to alternative approaches to current state financing systems and does not examine potential federal inputs.

2. Alternative Distribution Formulas

The distribution alternatives examined in Chapter III can be grouped into two broad categories:

(1) Partial state funding alternatives; that is, state aid distribution formulas which require some local contribution and therefore permit the district to retain some measure of local fiscal autonomy.

(2) Full state funding alternatives, which are likely to bring about greater equalization than the partial state funding alternatives, but at the expense of local fiscal autonomy.

These distribution formulas are analyzed from the following perspectives when compared with the existing financing scheme:

1. The extent of equalization -- whether disparities within the state and among types of districts are lessened or increased;
2. The shift in tax rates among the types of districts;
3. The extent to which the distribution of funds is related to the distribution of various kinds of pupils who are said to require additional resources beyond a basic program;
4. The increase (or decrease) in level of state aid;
5. The increase (or decrease) in total state-local expenditures for education.

Partial State Funding. Within this category, four basic types of alternatives were examined:

(1) State matching grants in inverse proportion to a district's fiscal capacity (ability to raise revenues);

(2) State guarantee of equal dollars for equal tax effort;

(3) State supplemental grants based on educational need;

(4) State assumption of total costs for specific functions.

The first two alternatives are related to fiscal need, the third alternative is concerned with educational need, while the fourth focuses on cost differentials for different functions.

(1) State matching grants based on fiscal capacity. A major concern of this analysis is to develop and test alternative measures of fiscal capacity. The typical measure currently used by most states for distributing at least a portion of their aid is fiscal capacity (ability to raise local revenues) as measured by per pupil property wealth, with state funds being distributed in inverse relationship to per pupil property wealth. Chapter III demonstrates the effect on various types of districts of using alternative measures of fiscal capacity for distributing funds -- such as per capita income, per pupil income, or percentage of low income families.

(2) Equal dollars for equal tax effort. This alternative is designed to preserve local choice in the level of expenditure, since the state guarantees a certain number of dollars per pupil for the particular tax rate chosen by the district, regardless of whether the district's own tax base could generate sufficient revenues to meet the expenditure level at that tax rate. The state also recaptures the excess dollars above the fixed expenditure level that a wealthier district raises at that same tax rate. Thus, expenditure levels are not dependent upon the fiscal capacity of a district. Recapturing revenues from the wealthier districts, thus forcing them to remain at a fixed expenditure level for a particular tax rate, and raising poorer districts to this same expenditure level if they

elect the same tax rate, in theory could lead to some measure of equalization. In practice, however, districts may select widely differing tax rates, possibly resulting in even greater disparities among school districts than under the existing system. The tax burdens for education under this alternative will probably be less unequal than under the present system.

(3) Educational need grants. This alternative is based on the assumption that fiscal need or capacity should not be the sole criterion for the distribution of state funds. Many commentators have suggested using various measures of educational need as a basis at least for distributing supplemental state grants, much as the federal Title I program is now designed. This study therefore examines the impact of utilizing such measure of education need as proportion of minority enrollment, number of federal ESEA Title I recipients (students qualify for these funds if they come from families earning under $2,000, according to the 1960 Census, or are recipients of welfare payments), low achievers as measured by their performance on statewide achievement tests, or number of students enrolled in higher cost programs such as the mentally and physicall handicapped and vocational students.

The problems with using these particular measures and the lack of information on how much additional resources should be distributed to various kinds of pupils are discussed in Chapter III. These measures would very likely not be the sole basis for distributing funds, but would be used as criteria for distributing grants which would supplement the district's basic program expenditure level. The objective of this alternative, then, would not be to equalize dollars or educational services, but to create inequalities by providing more than equal resources to specific types of pupils. Districts with greater concentrations of these pupils would obviously receive more state aid under this alternative than other districts.

(4) State assumption of costs for specific functions. Proposals for state assumption of non-instructional costs such as transportation, plant operation, and plant maintenance are premised on the fact that expenditures for these items vary widely among the types of districts and removal of these items from district responsibility would tend to equalize expenditures among districts within a state, However, the actual effect on equalization is minimal. As this study shows, the high cost of transportation in rural areas is offset by the low plant operation and maintenance costs compared to cities. Moreover, the amount of the total budget allocated for non-instructional expenditures is relatively insignificant compared to that for instructional expenditures.

Chapter III also examines the contribution toward equalization and the effect on tax rates if the state assumes the full cost of instruction, leaving the local districts to provide for non-instructional costs out of local revenues.

Full state funding. Two types of distribution formulas in this category were examined. The first is based on an equal dollars per pupil approach, with additional funds provided for those pupils who require additional resources beyond the basic program, on the assumption that there are higher costs in educating the disadvantaged, the physically and mentally handicapped, vocational students, the mentally gifted, etc.

The other full state funding alternative examined is based on a personnel unit formula -- which, instead of providing equal dollars per weighted pupil, provides teachers or other personnel according to classroom unit size. This alternative thus takes into account the differences among types of students in expenditures for instructional staff.

While the disparities in dollar per pupil expenditures within a state are considerably reduced under either of these alternatives, the trade-off, as noted earlier, is in the reduced fiscal role of the district.

Summary of Findings: Chapter III

1. Revenue Sources

(1) Significant expansion of the state share of public school financing will require substantial increases in existing state tax rates.

(2) To meet increased revenue requirements, a statewide property tax will be an attractive alternative to increasing present state tax rates. The statewide property tax reduces disparities in tax burden among individuals from different districts. However, its impact on disparities in educational resources is dependent upon the formula used to distribute the funds.

(3) Local income and sales taxes provide substantial revenue sources for property tax relief. They will alleviate the tax burden of low income individuals within districts, but will not substantially change and, in some cases, may increase the disparities in tax burden among residents of different districts.

2. Distribution Formulas

(1) Matching programs based upon "fiscal capacity" (ability of a district to raise revenues) can reduce dollar disparities if per pupil

property wealth is used as the "fiscal capacity" criterion.

(2) Matching programs using income measures of "fiscal capacity" could result in greater dollar disparities among districts but would insure concentration of state assistance to those districts with poor residents. Rural areas and central cities benefit more under formulas using income measures as criteria than under those based on property wealth.

(3) Matching programs will not overcome the advantage of wealthy districts in raising revenue unless the local share is "power equalized" (requiring the transfer of excess revenues to the state) or limits are placed upon the local revenues to be matched.

(4) Supplemental grants for low achieving students based on any of the proxies of educational need used in this study will concentrate funds in the central cities. The costs required to produce a positive impact on the educationally disadvantaged are likely to be so large that it is essential to identify those students with real needs rather than provide grants to such over-inclusive categories as Title I recipients or minority group members.

(5) Full state funding alternatives will reduce dollar disparities in the educational program among districts. Their implementation requires careful examination of the question of local autonomy, the relative needs of different types of students, and cost differentials arising from disparate market conditions within the state.

C. FULL STATE FUNDING IN HAWAII (Chapter IV)

Since some of the alternatives to current education finance systems being proposed, particularly in the wake of the recent court decisions, are full state funding alternatives, it was felt than an examination of the only state in the nation at present in which education is totally financed by the state should be undertaken for this report. Hawaii, which has seven administrative units -- four which can be termed urban-suburban, and three which are definitely rural -- are examined in Chapter IV in an effort to determine whether, even in a full state funding system, there are differences in spending among the various areas of the state and, if so, to what these differences are related -- e.g., the varying educational needs of students, differences in expenditure patterns by function, or differences in the costs of the same service -- such as teachers.

Full state funding alternatives have been opposed in part because of the anticipated loss of local autonomy. Because of the importance of this issue, an examination of the extent of the flexibility retained by administrative units or by individual schools under the centralized fiscal system in Hawaii was also undertaken.

Summary of Findings: Chapter IV

(1) Full state funding, as practiced in the State of Hawaii, results in relatively low disparities in per pupil spending.

(2) The disparities that do exist favor the low income, rural areas.

(3) Unlike other states examined, disparities in per pupil spending are due to two factors: high non-instructional expenditures and lower pupil-teacher ratios in the lower income rural areas compared to urban areas.

(4) The tax burden for the support of public elementary and secondary education is essentially proportional. Expenditures for education as a percent of income appear to be lower in Hawaii than in the three large urban, industrial states in this study (moderate aid states), but approximately the same as North Carolina and higher than Delaware, both high state aid states.

(5) There appears to be a fair amount of freedom at the district and individual school level to innovate and to adapt programs to meet the needs of a particular community, despite the existence of a centralized, fully state funded education system. The trend seems to be toward providing even greater flexibility to school units.

(6) The historic, political, and demographic features of Hawaii which have a bearing on its centralized educational system are so unique that it is difficult, on the basis of the preliminary study undertaken for this report, to determine whether the fiscal and education structure in Hawaii is transferable to other states, particularly the large urbanized, industrial states.

D. EFFECT OF INCREASED LEVELS OF STATE AID ON LOCAL AUTONOMY (Chapter V)

A study of the constraining effect of high levels of state aid on local district decision-making was undertaken. The results of this study are reported in Chapter V. This issue is of particular significance in light of the analysis of existing disparities discussed in Chapter II. There it was indicated that differences in local revenues are the dominant factor contributing to disparities in total per pupil revenues. Thus any alternatives which seek to lessen these disparities will no doubt mean greater state (or federal) aid. For this reason, the study examines the nature of the controls when the state has assumed a large share of the responsibility for financing education. In Chapter V, the statutes and regulations of ten states with proportionally different levels of state aid (relative to total state-local funds for education) were examined in light of eleven areas of education policy -- such as curriculum, textbook selection, and budgetary restrictions -- to determine to what extent increased levels of state aid were responsible for restrictions on local district decision-making.

Summary of Findings: Chapter V

(1) A review of eleven possible dimensions of state control over local school boards in ten states demonstrates that no consistent relationship exists between the percentage of state funding of total state-local education revenues and the degree of restrictions imposed by state statutes and regulations on local district decision-making.

(2) A study of the incidence of locally-adopted innovative educational practices indicates that the initiative of local school boards to adopt innovations is not inhibited in states with higher percentages of state funding of local education.

(3) The rate of adoption of innovative educational practices is generally higher in states which spend more per pupil in absolute dollars. This relationship is much stronger than that between the rate of innovation and the level of state funding.

E. INTRA-DISTRICT DISPARITIES (Chapter VI)

The final chapter of this report is concerned with the resource allocation pattern within school districts. Many of the factors which contribute to the disparities in per pupil spending among districts documented in Chapter II -- such as differences in property values, tax rates, starting teachers' salaries, and salaries for teachers of equivalent education and experience -- are not present within a school district. Nevertheless, inequalities in per pupil expenditures among the schools within a single district do exist. As new distribution alternatives are developed to meet the objective of lessening disparities among districts within a state and new revenue sources are developed to lessen the reliance on the local property tax, it is important to understand the possible impact of these alternatives on schools within individual districts. An examination of the existing resource allocation patterns within several selected urban districts and the factors contributing to these patterns was therefore undertaken, with particular emphasis on the degree to which current school allocations match the need for educational resources -- need being defined in terms of minority group status, low family income, or low socioeconomic status.

Summary of Findings: Chapter VI

(1) Analysis of seven school districts in two states reveals a common pattern whereby district discretionary funds are concentrated in schools of higher income and low minority populations, while state and federal compensatory funds are directed to low income, high minority schools.

(2) Schools in the middle range in terms of percent minority or income, which do not qualify for compensatory resources, and which do not attract the more experienced, more educated, and thus higher paid teachers, receive fewer dollars per pupil than schools at either extreme.

(3) Pupil-teacher ratios are somewhat lower in high minority, poor schools, but this has not been enough in some of the districts studied to raise the level of expenditures per pupil in these schools to the level of the wealthier, low minority schools.

(4) Teacher transfer policies in all districts studied are a major factor contributing to disparities in total per pupil expenditures.

(5) Equalization of per pupil expenditures is complicated by the differential distribution of kinds of resources within a given district. Therefore, in spite of the adoption of statewide formulas to reduce inter-district disparities, disparities in resource allocation between schools within districts may continue to exist.

III. SELECTION OF STATES FOR STUDY

A significant aspect of the disparity study is the attempt to determine whether there is a general pattern by type of district discernable not only among districts within a state but also across states. This would point to broader conclusions about education finance and the impact of various alternatives than might be possible from analyzing a single state.

States were selected, therefore, which would be representative of various regions of the country, various levels of state funding, the major approaches to financing elementary and secondary education, etc. Thus when common patterns are found occurring among diverse types of states, one can be more certain of the applicability to other states of generalizations made on the basis of the few states included in this study.

A major criterion in the selection of states for this study was the representation of states with differing levels of state aid as a percentage of non-federal school funds. Of particular interest were high state aid states, in view of the accelerating pressures from various public and private groups to have states assume a considerably greater share of fiscal support for primary and secondary education. Since a major premise of those who propose increased state funding is that it will result in less disparities in per pupil expenditures among districts, this premise, as well as the issue of local autonomy in high state aid states, is examined in this study.

A total of nine states were selected,[9] providing broad regional representation.[10]

Full State Funding:	Hawaii - Western Region.
High State Funding:	Delaware and North Carolina - South Atlantic; Washington State - Pacific.
Moderate State Funding:	California - Pacific; Michigan - North Central; New York - Middle Atlantic.
Low State Funding:	New Hampshire - New England; and Colorado - Mountain Region.

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[9] Delaware, Hawaii, North Carolina, Washington, California, Michigan, New York, Colorado and New Hampshire.

[10] The regional categories are those used by the Bureau of the Census.

The total enrollment in these nine states is 11.7 million, or over 29 percent of the national total.

In addition to differences in level of state funding and geographic diversity, the states selected represent a cross-section of other economic, demographic, and fiscal characteristics relevant to education finance. The three moderate aid states are predominantly urban with large populations and are heavily industrialized. In contrast, North Carolina and New Hampshire are primarily rural. A number of other comparative statistics between the states selected and all states in the nation is useful in illustrating the representativeness of states selected.[11/]

(1) Minority Enrollment. The range among the states studied (with the exclusion of Hawaii, which does not report such statistics) is from 0.7 percent in New Hampshire to 30.6 percent in North Carolina, with an average among the eight states of 17 percent, compared to the national average of 20 percent.

(2) Size of Enrollment. Included in the study are the two states with the highest enrollment in the nation, California and New York, and two with among the lowest number of students, Delaware and New Hampshire.

(3) Per Capita Income. Two states selected, New York and California, are considerably above the national average in income. North Carolina is sharply below the average. Per capita income in the nine states in this study is about 10 percent above the national average. Average per pupil income for the nine states approximates the national income average.

(4) Per Pupil Property Value. Both California, considerably above the national average, and North Carolina, below average, are part of this study.

[11/] Statistics in this section pertain to all districts in the state, not the sample districts from each state examined in this study.

(5) Non-Public School Enrollment. District level data for three states, Hawaii, Delaware, and Michigan, are included in the study. These three have non-public school enrollment above the national average.

(6) Current Operating Expenditures for 1968-69. The study includes the state with the highest per pupil expenditures in the nation, New York, and one of the five lowest, North Carolina. The other states in this study range from 8th highest (Delaware) to 30th (Colorado) in terms of per pupil expenditures.

(6) Federal Aid to States. The range among the states studied is from 4.1 percent federal aid in Michigan to 13.3 percent in North Carolina. The average of 6.5 percent federal funding in all nine states is close to the national average.

(7) State Tax Structure. This ranges in the states studied from a regressive tax structure for the support of public education in New Hampshire and Washington, to an approximately proportional tax structure in North Carolina, New York and Delaware.

In addition to general economic and fiscal comparisons, the nine states are also classified by the type and method of distribution of state general education revenues (as opposed to categorical aid programs) to local districts:

(1) Flat Grant Personnel Unit. Of four states in the country using this method for distributing state funds, three, Hawaii, Delaware, and North Carolina, are included in the study.

(2) Per Pupil Flat Grant. Only one state in the nation distributes general state aid solely on this basis, Connecticut.

(3) Equalizing Grant Only. Twenty-seven states currently distribute general aid funds through an equalizing grant formula. Two of these, Michigan and Washington, are included in this study.

(4) Combination Equalization and Flat Grant. Seventeen states utilize a combination flat grant equalizing formula for distributing state aid. Three of these states -- California, Colorado, and New York -- are included in the study. Of these three, only California has the larger share of state general aid distributed as flat grant aid -- 56.3 percent.

Of the seven states which provided state-funded compensatory aid programs for the disadvantaged in 1968-69, three -- California, Michigan, and New York -- are included in the study. Two other states provide additional funds for the disadvantaged through a weighted pupil formula. One of these states, Washington, is included in the study.

Although there is no doubt that the states selected represent a cross-section of many characteristics associated with education finance, there are certain limitations in generalizing from the findings in these states to the nation as a whole:

(1) The size of the sample represents less than 30 percent of all enrollment in the nation. While this size is sufficient to draw reliable inferences, expanding the number of states would increase confidence in the results.

(2) Despite numerous similarities, every state has certain unique education finance characteristics which are not fully comparable with those of other states. In most cases, however, these differences do not

affect the principal fiscal or educational characteristics.

(3) The study represents only one time period; thus, while the direction of certain characteristics may be changing relative to other states, this cannot be ascertained in a cross-section analysis.

(4) The intra-district resource allocation analysis represents only seven districts in two states.

Despite these limitations, it is the view of the authors of this report that findings as specified in each chapter of the report are applicable, at least in part, to the majority of the states in the nation. The data are probably most useful in indicating the over-all structure of education finance, as well as in comparing the characteristics of a particular type of district or state with other districts and states.

The alternative funding and allocation formulas presented in this report will almost invariably require modification to meet the needs of a particular state. Nevertheless, with the information provided, the reader will be able to predict the likely outcome of applying an alternative to a district or state, aided by a comparison of the disparities and fiscal ability of that district or states with those discussed in the report. To facilitate the use of the study, Volume II discusses the education finance characteristics of each state included in the study.

CHAPTER II

DISPARITY ANALYSIS

INTRODUCTION

I. OBJECTIVES OF THE DISPARITY ANALYSIS

In undertaking an analysis of the disparities in per pupil expenditures for elementary and secondary education and of the disparities in tax burdens for the support of education, this study includes among its objectives the following:

- To measure the nature and extent of the disparities in per pupil spending among states and among types of school districts (central city, suburban, smaller city, and rural).
- To determine whether there are common patterns among all states as, for example, whether the spending patterns of all central cities are similar, regardless of the state in which they are located.
- To find out why these disparities occur -- in particular, whether they can be related to:
  (1) The proportion of state funding relative to total (non-federal) education revenues;
  (2) Differences in spending for various functions such as transportation, administration, instruction, or plant operation;

(3) Differences in costs for the same function, with particular emphasis on instructional costs, and the factors contributing to the differences;

(4) The fiscal capacity of local school districts.

- To determine who pays for public elementary and secondary education by comparing state and local tax burdens for selected income classes among states and within a state.

II. SELECTION OF STATES FOR STUDY

The primary criterion for selection of states was the level of state funding as a share of total non-federal expenditures for elementary and secondary education. Other criteria included a balance of geographic regions and population size. States were also selected to represent the principal methods of financing public elementary and secondary education utilized in the nation. Based on these criteria, the sample includes the one state in the nation with full state funding (Hawaii); three states with high state funding (Delaware, North Carolina and Washington); three populous, highly industrial and urbanized states with moderate levels of state aid (California, Michigan and New York), and two states with low state contributions to local school districts (Colorado and New Hampshire). Detailed fiscal and other relevant educational data have been collected for the three high aid states and three moderate aid states. New Hampshire and Colorado are examined in somewhat less detail. Because of the unique education finance structure in Hawaii and the importance of considering a fully state funded alternative to present methods of financing education in the other forty-nine states, this state is discussed separately (see

Chapter IV).

The standard unit used in this study for comparing school districts within and among states is Average Daily Attendance (ADA) rather than enrollment or Average Daily Membership, since most states provide data in ADA. Where data are not in terms of ADA, they are converted to this unit to allow inter-state comparisons.[1/] Statistics, where applicable, are weighted by the size of the school district ADA.[2/]

III. TYPE AND NUMBER OF DISTRICTS SELECTED

To avoid comparisons of per pupil expenditures in widely varying circumstances, districts in the states studied were grouped according to

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1/ Data sources include published reports by various state agencies, including departments of education, of revenue, and of finance, as well as state education associations. Unpublished sources include data on computer tapes received from state education departments, and various school district reports to state agencies, as well as data collected by the staffs of state agencies specifically to meet requirements of this study.

2/ This means that a large district is given more "weight" in calculating a statewide average than a small district. For example, Los Angeles, the second largest city in the study, has an ADA of 664,410. This comprises 65 percent of the ADA of central cities in California and about 25 percent of the total sample districts in the state. Thus, in calculating average expenditures for central cities, Los Angeles accounts for about 65 percent of all such expenditures, influencing the average considerably more than Santa Monica. To count each school district equally would give equal "weight" to a district with one thousand students relative to Los Angeles with its 664,410 students, and would lead to error in determining average expenditures for the state. Nevertheless, for certain analyses, both approaches may be used. For example, to determine average starting teacher salaries in six states, California should be considered one unit and Delaware also as one unit. However, to determine the average salary of all of the teachers in the six states, regardless of the state in which they teach, the data should be "weighted" by the number of beginning teachers in each state to provide a statistically meaningful average. In New York State, the city of New York comprises 52 percent of the state sample ADA. In view of this dominance, this study has investigated the impact on the state's educational characteristics of excluding the city. This is shown in Table II-4.

four categories -- central cities, suburbs, smaller cities, and rural areas. This is useful in analyzing teacher costs, for instance, because central cities and suburbs in large metropolitan areas are likely to compete for teachers in the same labor market. Similarly, small cities, although they are not necessarily contiguous, are likely to have similar wage structure patterns. Rural districts also have their own wage structure pattern.

These four types of districts in the eight states studied (Hawaii being excluded) are defined as follows:

(1) Central Cities. Central cities are defined in two ways. First, only cities with a population in excess of 250,000 are considered. This group consists of eleven cities in the states of California, Colorado, Michigan, New York, and Washington.3/ But since there are no cities with a population approaching 250,000 in the states of New Hampshire, Delaware, and North Carolina, for purposes of intra-state comparisons the central city definition is broadened in these three states to include the seven cities with a population over 50,000.4/ To maintain consistency in considering overall average values as, for example, average central city revenues across five states, only cities with a population of over 250,000 are included.5/

3/In the states of California and Washington, all cities with populations of 100,000 and over were also treated as "central cities," and their surrounding school districts as "suburban," to determine the impact of this change in definition on the analysis. As discussions of these two states in Volume II show, the impact was negligible. Thus, this section of the report defines central cities for these two states as those with a population of 250,000 and over.

4/It should be noted that although Manchester, New Hampshire and Wilmington, Delaware are small in size, they have many of the same characteristics of the larger central cities of other states.

5/The inclusion of the seven cities with a population over 50,000 but under 250,000 decreases city revenues by less than two percent.

(2) Suburban. Suburban school districts are all districts in built-up areas close to the central cities, as defined above, in each state. Suburban districts do not necessarily comprise all districts within the SMSA outside the central city, inasmuch as the metropolitan area frequently includes school districts with characteristics more similar to those of rural areas.[6] Because of the county school unit administrative structure in North Carolina, none of its school districts can be considered "suburban."

(3) Smaller Cities. Smaller cities are defined as non-central cities with a population in excess of 10,000. Although this results in a wide population range, it does not appear to increase the disparities in expenditures among smaller cities substantially. In five of the states, all cities above 10,000 have been included in the sample. But in the populous states of California, Michigan and New York, all cities above 50,000 and a sample of the 10,000 to 50,000 range were included.

(4) Rural. Rural districts are defined for this study as those which do not contain towns or cities with a population of 10,000 or more. Because of the lack of data for very small districts, and the fact that this study analyzes only unified districts (those including grades K or 1 through 12), the rural districts in the sample have an average enrollment of over 3,000 students which is considerably above the average of all rural districts in the states studied.

As a result of the selection procedure, it is unlikely that districts which have very low or very high expenditure levels are included in the sample. For example, a number of states such as Washington have some school districts with under 50 students and very high expenditures. These districts, however, are likely to consist of only a single elementary school, and thus are excluded from the sample, which includes only K or 1 through 12 districts. This procedure results in considerably lower expenditure coefficients of variation than would be expected if expenditures which included all school districts were to be calculated.

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[6] Even when these more "rural" districts are excluded from the suburban category, this study finds substantial differences in the characteristics of suburban districts. This suggests the usefulness, in future research, of grouping suburban districts into sub-categories, possibly on the basis of per capita income or per pupil property value.

In general, there is an urban bias in the selection of sample districts. Since rural districts are under-represented, summary state data tend to be more representative of urban districts, except in Delaware, where all school districts have been included for analysis.

Districts in each of the eight states (Hawaii has been excluded from this analysis) fall into one of the following categories:

Type of District	No. In Sample	Average District ADA
All Central Cities	18	146,593
Central Cities, Population Above 250,000	(11)	229,791
Suburbs	159	10,967
Smaller Cities	163	11,376
Rural Districts	283	3,069
County-wide Urban Districts (North Carolina)	26	15,881
TOTAL	649	12,547

Approximately 8.2 million students are included in the sample, or about 19 percent of the nation's elementary and secondary public school students.

All districts in the sample are unified districts -- that is, containing grades K or 1 through 12. All data collected are for the school year 1968-1969, which permits consistent intra-state and inter-state comparisons.

Expenditure data are limited to current operating costs and are generally limited to expenditures at the school district level, shown by state and type of district in Table II-1.[7] Thus, unless incorporated into the local district budget, state board of education costs and certain state administered programs (for example, educational television in Delaware), are excluded. The per pupil cost of state funded pension and social security payments for public school employees is estimated for those states included in this study where such payments are provided by the state.

Subsequent sections of this chapter analyze differences in revenues and expenditures from two perspectives: among the four types of districts across states, and among all districts in one state relative to all districts in other states in the study. For example, differences among all central cities in the states selected for study are examined. In addition, the nature of the differences between central cities and their suburbs in one state are compared with these central city-suburban relationships in all states.

Part I of this chapter is concerned with inter-state and intra-state revenue comparisons. Revenues are examined by source of funding to

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[7] Capital expenditures are excluded from this analysis, since this is a cross-sectional study which examines revenues and expenditures only for the school year 1968-1969. Capital expenditures fluctuate significantly among districts from year to year. Thus the inclusion of this item would affect any comparisons of revenues and expenditures among districts made for a single year.

TABLE II-1

TOTAL CURRENT OPERATING EXPENDITURES*
(1968-1969)

	Central Cities	Suburban	Smaller Cities	Rural	Statewide Average
Delaware	$841	$725	$678	$637	$705
North Carolina	598	-	557	572	567
Washington	852	794	757	701	767
California	768	727	718	705	739
Michigan	814	901	857	632	829
New York	1,278	1,245	1,078	1,033	1,229

*Includes state benefits for school employees.

determine the relative importance of local, state, and federal revenues on total funds available for elementary and secondary education; to determine differences in the level of funding by source for each type of district; and to measure the degree to which a particular source of funding increases or decreases revenue differentials between districts.

The fiscal characteristics of school districts are then examined. Per pupil property wealth by state and by type of district within each state are compared and are related to school district property tax rates. The effect of utilizing per capita income versus per pupil income data in determining the fiscal capacity of school districts, is discussed. The relationship between school district minority enrollment and such education finance characteristics as revenue sources and district wealth is also explored.

Finally, Part I estimates the tax burden for the support of public elementary and secondary education for each of the states studied and for selected household income groups within each state. The combined state-local tax burden is computed for both urban and rural areas of each state.

Part II of this chapter is concerned with inter-state and intra-state expenditure comparisons.[8] It first examines the disparities in expenditures by function. The analysis is focused on determining differences in the level of funding for particular education activities (e.g., instruction, plant operation and maintenance, transportation), and on estimating the impact these differences have on overall expenditure disparities, both among the states themselves and among types of districts. The major objectives of this analysis are to isolate those functions which account for a larger proportion of total disparities in per pupil spending, and those functions which fluctuate widely in their proportion of the total budget among the four types of districts.

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[8] Because insufficient data were available for a detailed expenditure analysis of Colorado and New Hampshire, Part II is limited to an analysis of only six states, although the revenue analyses in Part I are generally based on all eight states. (As noted previously, Hawaii is discussed in a separate chapter.)

Since differences in instructional staff expenditures are the major factor explaining inter-state and intra-state expenditure differentials, the effect of teacher characteristics on these differentials is examined. Teacher characteristics include starting and average teacher salaries, education and experience levels, and pupil-teacher ratios.

Since the states selected for this study vary widely in per capita income, the extremes being North Carolina and New York,[9/] the differences in inter-state per pupil expenditures are likely to be substantial. To demonstrate how equal resources may cost more in one geographic area than in another, the expenditures in New York and North Carolina (primarily for teachers) are compared, after equalizing for such differences between the two states as pupil-teacher ratios and education levels of teachers. The extent to which expenditure differences are likely to be associated with wage differentials is also estimated.

[9/] Using per pupil property values as the measure of wealth, however, California exceeds New York State.

PART I

INTER-STATE AND INTRA-STATE REVENUE COMPARISONS

I. REVENUE SOURCES BY TYPE OF DISTRICT

Revenue data reflect funds allocated for current operating expenditures from the federal, state, and local governments.[10/]

Local Revenues. In the eight states examined in this portion of the study, local revenues in the school year 1968-1969 provided over half of the revenues from all sources. This share varied from 38.9 percent in rural areas to 57.3 percent in central cities. As illustrated in Table II-2 and Figures II-2(a) and (b), the disparities in total revenues among types of school districts appear to be almost exclusively due to differences in local funding.

State Revenues. State revenues do not vary greatly from one type of district to another. The least state funds are provided to smaller cities, the most funds to rural districts.[11/] The average suburban state aid in dollars per pupil is only a few dollars below that received by central

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[10/] In some cases, it proved infeasible to separate revenues for current expenditures from total revenues. This is why, in some states, total revenues exceed current operating expenditures (COE). Although the use of current operating expenditures is probably a preferable method for comparing sources of funding, only two states provide expenditure data in a way which indicates whether particular items were funded from federal, state or local sources.

[11/] This analysis of revenues by type of district excludes state paid pension and social security payments since these funds cannot be allocated on a district basis.

TABLE II-2

REVENUES BY SOURCE AND TYPE OF DISTRICT - ALL STUDY STATES[1/] (1968-1969)

Revenues--Dollar Per Pupil ADA	Central[2/] Cities	Suburban	Smaller Cities	Rural	All Sample Districts
Total	$1,054	$896	$773	$750	$902
Federal	67	26	51	57	51
State	383	372	339	401	371
Local	604	498	383	292	480
Revenues--Percent					
Federal	6.4%	2.9%	6.6%	7.6%	5.7%
State	36.3	41.5	43.9	53.5	41.1
Local	57.3	55.6	49.5	38.9	53.2

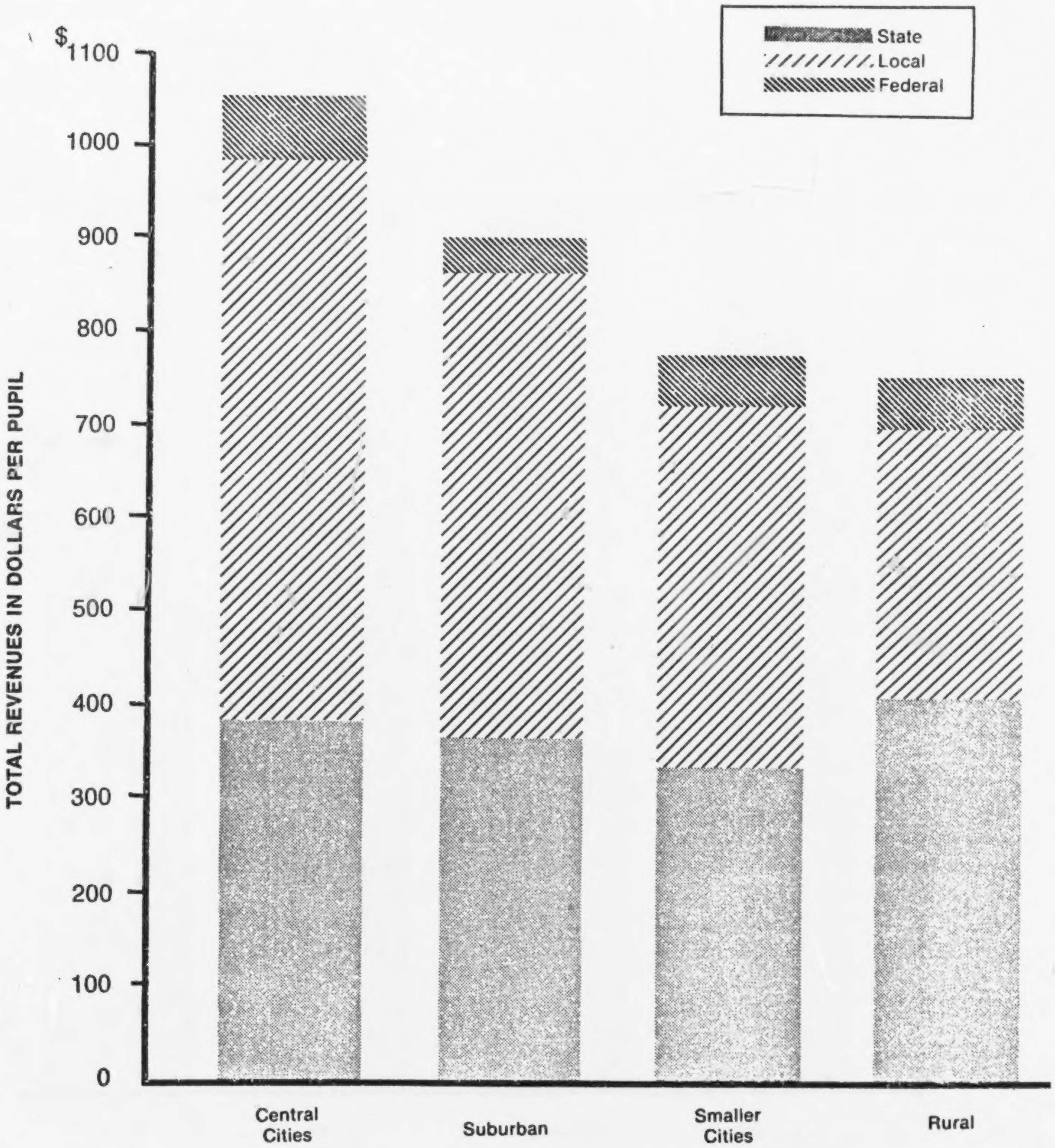
[1/] Delaware, North Carolina, Washington, California, Michigan, New York, Colorado, New Hampshire. Excludes state payments for teacher benefits.

[2/] Central cities defined as cities with a population of 250,000 and over.

FIGURE II-2(a)

REVENUES BY SOURCE AND TYPE OF DISTRICT
ALL STUDY STATES*

1968-1969
IN DOLLARS

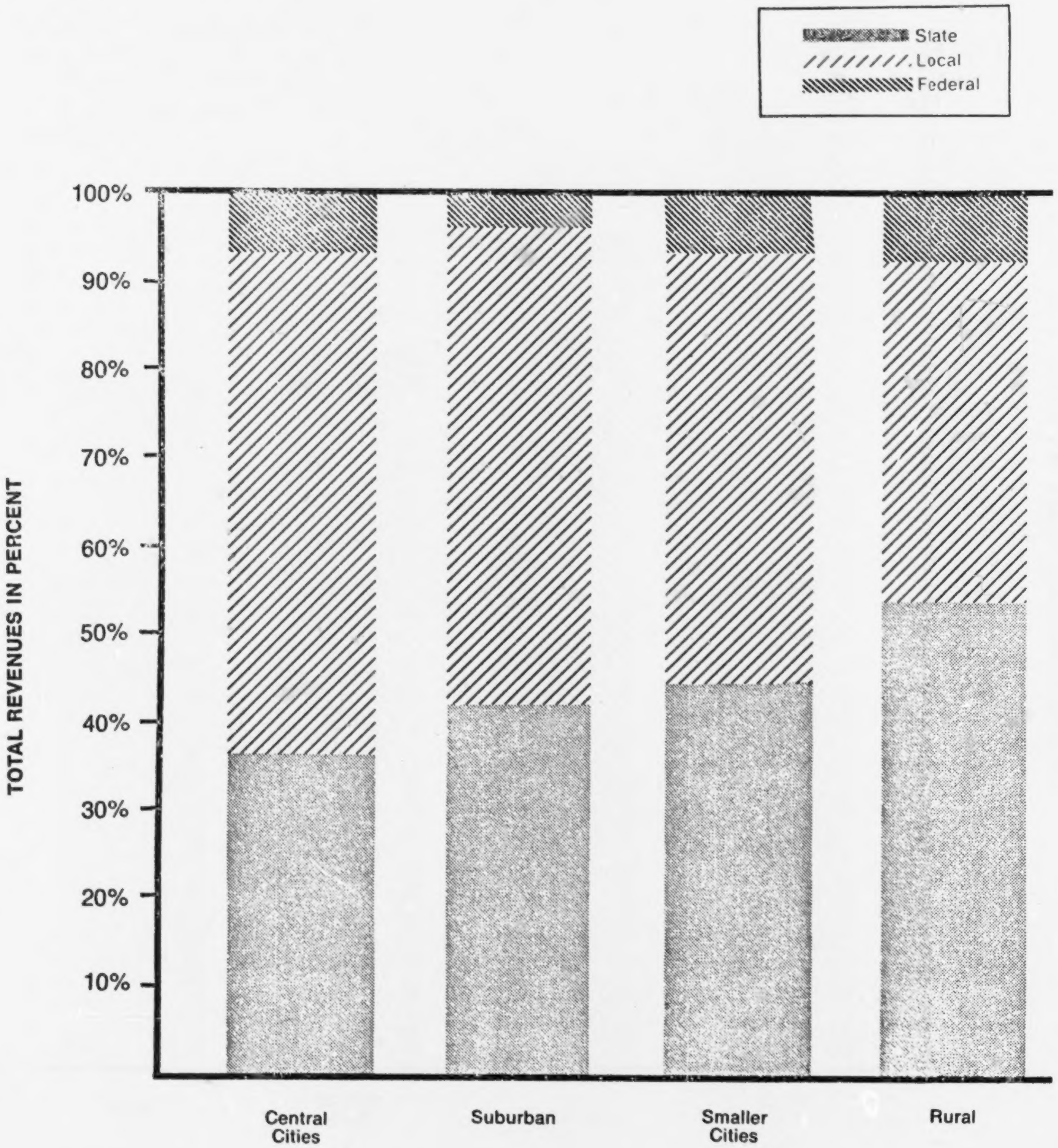


*Delaware, North Carolina, Washington, California, Michigan, New York, Colorado, New Hampshire. (Hawaii excluded.)

FIGURE II-2(b)

REVENUES BY SOURCE AND TYPE OF DISTRICT ALL STUDY STATES*
1968-1969

IN PERCENT



*Delaware. North Carolina. Washington. California. Michigan. New York. Colorado. New Hampshire. (Hawaii excluded.)

cities. However, the percentage of state aid relative to all education revenues varies sharply, from only 36.3 percent in central cities to 53.5 percent in rural districts.

Federal Revenues. Federal funds, since they contribute only 5.7 percent of all education funds in the sample districts, do not have a substantial impact on revenue differentials. For example, to equalize suburban-rural total revenue differences, federal aid to rural districts would have to increase from the present $51 per pupil to $204 per pupil -- a four-fold increase. Central cities receive the most federal funds among the four types of districts on a dollars per pupil basis -- $67. However, as a percentage of total revenue, federal aid is a higher proportion of total revenues in rural districts than it is in other districts, amounting to 7.6 percent of all education revenues in rural areas.

II. DIFFERENCES IN REVENUES FOR EDUCATION BY TYPE OF DISTRICT

Revenue differentials for education within states, when all revenue sources are combined, are attributable primarily to differences in the level of local revenues raised by individual districts. The disparities in local revenues are greater among states which furnish a high proportion of the total amount of education support. Where state aid is so high, some districts need only tax themselves locally at a very low level, yet still have a full educational program. However, when state and local revenues are combined, the disparities in these high aid states are appreciably lower than in the moderate and low state aid states. The only exception to this pattern is New Hampshire, which relies almost exclusively on local revenues but concurrently exhibits the least disparities among its school districts of all the states in this study.[12]

In all eight states except Washington, federal funds tend to reduce over-all total revenue disparities. The impact of federal revenues on disparities is not significant, however, because of the relatively small amounts involved. Table II-3 shows that state aid, and usually federal aid, is equalizing, but not to a level where substantial revenue differentials between school districts within the states are eliminated.[13]

An examination of total revenue disparities among school districts by type of district (see Table II-4) across all eight states reveals that there are considerable differences, due mainly to the influence of New York State, where total revenues are substantially above the levels of the other states.[14] Disparities by type of district, if all revenue sources

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[12] Little differences are found in local revenues for education among the school districts in New Hampshire, despite the existence of differences in property wealth. Since the variation in per capita income among school districts is least of any of the states studied, districts with lower property values are able and willing to tax themselves at a high level. In addition to little variation in local funds for education, state aid as it is distributed in that state tends to be concentrated in districts where local contributions are relatively low, thus further equalizing total revenues.

[13] Disparities in per pupil revenues (and in expenditures) in this and subsequent tables are expressed in terms of coefficients of variation. The coefficient of variation (v) is defined as the standard deviation devided by the mean. Low values indicate that there is little disparity among districts in revenues, expenditures, or whatever else is being measured. For example, a coefficient of variation of .05 for average teachers' salaries in a given state indicates that there is little difference in average teachers' salaries among the school districts. On the other hand, a coefficient of variation of .50 would represent substantial differences in salaries.

[14] The exclusion of New York State reduces inter-district disparities among states analyzed in this study by about half, as shown in Table II-4. When the data are viewed in this manner, the disparities appear most reduced among the central city districts. The greatest disparities, however, remain in suburban areas.

TABLE II-3

COEFFICIENTS OF VARIATION BY SOURCE OF REVENUE--STATEWIDE (1968-1969)

STATE	Local Revenues Only	Local and State Revenues	Local, State and Federal Revenues
High Aid States			
Delaware	.474	.132	.130
North Carolina	.535	.117	.097
Washington	.323	.114	.120
Weighted Mean	.446	.117	.109
Moderate Aid States			
California	.321	.146	.142
Michigan	.328	.156	.156
New York	.309	.165	.134
Weighted Mean	.318	.154	.142
Low Aid States			
Colorado	.294	.173	.163
New Hampshire	.127	.112	.093
Weighted Mean	.267	.163	.152
TOTAL WEIGHTED MEAN	.341	.147	.136

TABLE II-4

COEFFICIENTS OF VARIATION BY TYPE OF DISTRICT
ALL STUDY STATES
(1968-1969)

District Type	Local Revenues Only		Local and State Revenues		Local, State and Federal Revenues	
	All States	New York State Excluded	All States	New York State Excluded	All States	New York State Excluded
Central Cities[1/]	.316	.234	.341	.108	.322	.113
Suburban[2/]	.536	.434	.388	.195	.377	.194
Smaller Cities	.404	.415	.250	.173	.240	.158
Rural	.799	.726	.424	.214	.375	.165
TOTAL WEIGHTED MEAN	.499	.437	.378	.179	.359	.165

[1/] Cities with a population of 250,000 or over.

[2/] North Carolina omitted.

are included, are greatest among suburban districts, followed by rural districts. The least disparities are found among smaller cities. This study found that among suburban districts there were also substantial disparities in other matters related to revenues,[15] which clearly suggests that to consider suburbs as homogeneous entities for purposes of education finance, as is often done, is erroneous and misleading.

III. FISCAL CHARACTERISTICS OF SCHOOL DISTRICTS

Most states believe that the ability of local school districts to raise revenues is closely related to per pupil property wealth. This is evident in the state aid distribution formulas, and relates to the fact that the property tax is the general method of raising local school district revenues. With the exception of Delaware, North Carolina, and New Hampshire, all of the states studied show a significant negative correlation between per pupil property values and state revenues.[16] That is, where property values are low, state revenues are high. This reflects the fact that the typical state aid formula attempts to "equalize" on the basis

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[15] E.g., property wealth, income, proportion of minority students.

[16]

State (All Sample Districts)	Correlation Coefficients (r) Property Value Per Pupil/State Revenue
Delaware	.30*
North Carolina	-.15
Washington	-.48*
California	-.81*
Michigan	-.86*
New York	-.75*
Colorado	-.44*
New Hampshire	.08

*1 percent level of significance

of school district property wealth. This means that the state uses this measure of fiscal capacity or need for distributing at least a portion of its funds.

In Delaware, the correlation between per pupil property values and state revenues is found to be positive. This is because Delaware uses a flat grant personnel unit formula rather than an equalizing formula based on property wealth. The result is that districts which have the greatest property wealth get more state revenues, for the following reason: the state salary schedule recognizes differences in the education and experience levels of teachers. The central city of Wilmington, which has a very high number of experienced teachers compared to other areas of the state, gets more from the state for the same number of teacher positions. Also the affluent suburbs have more teachers with advanced degrees than other areas of the state, again requiring the state to pay higher salaries.

North Carolina, which also has a personnel unit formula, shows a slight negative correlation, although not statistically significant. The reason is that, unlike Delaware, there are very little differences in teacher salaries among categories of districts. More importantly, the state provides a substantial amount of transportation aid to rural districts, which are also the districts with the lowest property values.[17/]

In the case of New Hampshire no significant correlation was found. Although a portion of state revenues is distributed on the basis of relative per pupil property wealth, the "Meals and Rooms" tax and state lottery funds are distributed on a flat per pupil grant basis. Since

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[17/] There is a strong negative correlation between state funds for transportation and per pupil property values.

these funds amount to a large share of total state education revenues, they apparently offset the effect of the state's equalizing formula grant.

When the relationship between state revenues and per pupil property values was examined by type of district across states, it was found that for each type of district type, the correlation was negative.[18] The negative relationship is strongest in the suburbs, which do not generally qualify for state compensatory funds or transportation funds.

However, since a large share of a district's property base is frequently comprised of industrial or commercial property, property wealth may not accurately reflect the income level of the district's residents.[19] Because of this deviation between income and property wealth, income has been suggested frequently as an alternative criterion for distributing state revenues.

A statistically significant negative correlation between per capita

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[18]

District Type	Correlation Coefficients (r)* Property Value Per Pupil/State Revenue
Central Cities	-.36
Suburban	-.49
Smaller Cities	-.37
Rural	-.39
ALL SAMPLE DISTRICTS	-.35

*All at 1 percent level of significance

[19] For example, Ann Arbor, a relatively high income community, has a per pupil property base of $47,220, considerably below the $76,876 per pupil property base in Dearborn, with a lower per capita income. In Ann Arbor, 72.6 percent of the real property base is comprised of residential property, while only 37.3 percent of Dearborn's property base is residential.

income and state aid was found in four of the six states examined.[20/] This negative correlation is due to two factors: (1) Rural areas have the lowest per capita income as well as the lowest property wealth and receive the most state aid. (2) In school districts which are dominantly residential, there is a positive correlation between income and property wealth. However, an examination of the correlation coefficients by type of district indicates that the relationship between rural district income and state revenue is dominant.[21/] Thus, the only statistically significant correlation between state revenues and per capita income is found among rural districts. It is therefore evident that state aid, except in rural areas, is not closely related to a per capita income measure of fiscal capacity.

In view of differences in demographic characteristics, distribution

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[20/]

State (All Sample Districts)	Correlation Coefficients (r) Per Capita Income/State Revenue
Delaware	.01
North Carolina	-.32*
Washington	-.38*
Michigan	-.39*
New Hampshire	-.20
Colorado	-.53*

*1 percent level of significance.

[21/]

District Type	Correlation Coefficients (r) Per Capita Income/State Revenue
Central Cities	-.155
Suburban	-.105
Smaller Cities	-.040
Rural	-.225*
ALL SAMPLE DISTRICTS	-.116

*1 percent level of significance.

of property by type, and non-public school attendance, there are considerable differences between per capita and per pupil measures of income and property wealth. These differences will be examined in the following pages, where it will be shown that the particular fiscal measure of ability to pay which is selected can have a significant influence on the distribution of state funds to local school districts.

A. Property Wealth[22/] and Property Taxes

In some states, the property base utilized for levying school taxes includes both real and personal property.[23/] Per pupil property wealth, as shown in Table II-5, is $48,837 in central cities, exceeding the suburban average by about 35 percent. Central cities also show the least variation in property wealth. The greatest differences in property values occur among suburban districts.[24/] Per pupil property wealth in smaller cities is somewhat below the suburban level. Rural areas have the lowest

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[22/] Assessed property values are adjusted for each school district in this study to reflect full or "market" value, on the basis of official assessment to full value ratios provided by each state. However, this study found wide discrepancies between the state ratios and those computed by the 1967 Census of Government and other independent studies. In Delaware, the ratio utilized by the state exaggerated the market value of property in Wilmington, relative to its suburbs. It is likely that in rapidly growing suburbs, property values are understated relative to central cities.

[23/] Delaware and New York tax only real property. In Colorado 13.7 percent, Michigan 23.2 percent, New Hampshire 7.2 percent, North Carolina 30.9 percent, and Washington 17.7 percent of the property base is comprised of personal property. The greatest share of the personal property tax falls on commercial and industrial goods, although some states also tax agricultural goods, motor vehicles, and household goods.

[24/] As other parts of the study have noted, suburban districts not only differ from each other in property wealth but in many other characteristics, including income and expenditure levels for education.

TABLE II-5

PROPERTY VALUES AND PROPERTY TAX RATES BY TYPE OF DISTRICT (1968-1969)

	Per Pupil Property Wealth	Coefficient of Variation Within District Type	Effective Property Tax Rate Per $100	Coefficient of Variation Within District Type
Central Cities[1/]	$48,837	.27	$1.19	.25
Suburbs	36,136	.58	1.38	.40
Smaller Cities	33,293	.40	1.21	.40
Rural Districts	27,467	.56	0.95	.64
ALL SAMPLE DISTRICTS	$38,926	.45	$1.22	.38

[1/] Cities with population over 250,000 property wealth in all states examined with the exception of Colorado.[25]

Property wealth in the central city is high relative to suburbs (and also to other types of districts) for several reasons, including the following: (1) A high concentration of commercial and, to a lesser degree, industrial property;[26] (2) A higher percentage of non-public school enrollment; and (3) A high rate of out-migration of households with children in the school age group. These latter two factors are significant since property wealth is measured on a per public school student basis.

A comparison of effective school property tax rates in 1968-1969, including real and personal property, is shown by state and type of district in Table II-6. As this table indicates, using either weighted or unweighted averages, suburban areas have the highest tax rates. However, despite the higher average tax rates for schools, the suburbs raise less revenue from property than central cities, because of their lower property values. The use of weighted tax rates results in the lowest taxes being paid by rural areas, with both large and smaller cities having approximately the same tax levels. Treating each state equally (unweighted average), rural areas and central cities have the lowest tax rates, followed by smaller cities. As would be expected, the three states with high levels of state funding have an average property tax which is less than half the

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[25] Rural property wealth as shown in the 1967 Census of Governments, Vol. II, is considerably understated in most states. Therefore, state-provided equalization ratios utilized in the study do not fully reflect differences in assessments. An analysis of North Carolina undertaken for this study indicates that property tax collections could be increased by about 15 percent if acreage and farms in rural areas, and to a lesser extent vacant lots in urban areas, were assessed at the level of residential property.

[26] In San Francisco 43.5 percent, New York City 41.8 percent, and Detroit 40.4 percent of all real property in 1966 was comprised of commercial and industrial land and buildings. Outside metropolitan areas, the national average was only 17.4 percent for 1966.

TABLE II-6

EFFECTIVE TAX RATE FOR SCHOOLS
REAL AND PERSONAL PROPERTY
(Per $100 Market Value)

State	Central Cities	Suburban	Smaller Cities	Rural	Statewide Average
Delaware	$ .66	$ .59	$ .55	$ .22	$ .49
North Carolina	.67	-	.61	.46	.55
Washington	.62	.82	.59	.53	.63
California	1.02	1.22	1.23	1.03	1.12
Michigan	1.04	1.31	1.21	.87	1.16
New York	1.48	2.09	1.67	1.75	1.89
New Hampshire	1.55	2.71	1.97	2.38	2.06
Weighted Average	1.18	1.38	1.21	.95	1.21
Unweighted Average	1.01	1.96	1.12	1.03	1.18

average property tax for education in other states. New Hampshire, with minimal state funding, and New York, with moderate state revenues for education, have the highest tax rates.

Since five of the states studied levy taxes on both real and personal property in varying proportions, and two states tax real property only, a more meaningful inter-state tax comparison is to extract the share of locally assessed personal property, as shown in Table II-7 from the property base. This procedure narrows but does not eliminate the gap between New York and other moderate state aid states. The taxes in North Carolina and Washington are increased relative to Delaware, which taxes only real property, but tax rates in all three high state aid states remain at only half the level of those in the moderate aid states. Rural areas have low per pupil property values and low property taxes (with the exception of New York and New Hampshire, as shown in Table II-6). As a result, revenues raised in rural districts for schools are below the level of other districts in most states. This may be due to differences in income, as well as the higher cost of purchasing education resources in suburbs relative to rural areas, thus requiring greater local effort to maintain basic school programs. In addition, rural areas tend to have little commercial-industrial property, where part of the burden of the tax can be shifted out of the district. This means that in rural areas, a greater tax burden is borne directly by owners of residential property and farm land. In North Carolina and Delaware, most rural districts show little inclination to supplement state aid to any great extent, with some districts in both states raising practically no local revenues. This is not, however, the situation in New York or New Hampshire. In these states, the sample rural districts tax themselves at rates close to the other categories of

TABLE II-7

ASSUMED[1] TAX RATE - REAL PROPERTY ONLY
(Per $100 Market Value)

State	Central Cities	Suburban	Smaller Cities	Rural	Statewide Average
Delaware	$ .66	$ .59	$ .55	$ .22	$ .49
North Carolina	.94	-	.86	.65	.78
Washington	.77	1.01	.73	.65	.77
California	1.17	1.40	1.41	1.18	1.29
Michigan	1.35	1.70	1.57	1.13	1.51
New York	1.48	2.09	1.67	1.75	1.89
New Hampshire	1.67	2.93	2.13	2.57	2.22
Unweighted Avg.[2]	1.15	1.62	1.27	1.76	1.25

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[1] For purposes of inter-state comparisons, personal property taxes in all states except Delaware and New York, which tax only real property, were excluded from the property base, and assumed property taxes based only on real property were computed.

[2] Weighted average not computed.

school districts.

Although central cities in the states studied have lower tax rates for schools than the average suburban tax rate, such comparisons are not meaningful without considering the impact of two factors: (1) The personal property tax,[27] and (2) "Municipal overburden," or taxes for non-education public services. Although this study did not examine the issue of municipal overburden to any great extent,[28] the proportion of total property tax collections allocated for schools was compared to that for other public services by type of district for the states of Delaware, New Hampshire, and North Carolina. This comparison, as would be expected, indicates that cities allocate a much larger share of their total budget for non-education services than do other types of districts.[29] The cities in these states were found to allocate a lower percentage of their property tax for schools, but more dollars (because of higher property values) than other types of districts.

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[27] Central cities, and smaller cities with a high concentration of industry, in states which tax industrial and commercial tangible personal property, are benefited by the broadened property tax base. As examples, 36.7 percent of locally assessed property tax base in Detroit and 20.8 percent of the base in San Francisco is personal property, considerably above the balance of the state averages of 20.6 percent and 10.0 percent.

[28] The issue of municipal overburden also involves fiscal flows between jurisdictions and differences in level and quality of public services, as well as the importance of particular public services to residents. These factors require an in-depth examination to determine the extent to which "municipal overburden" exists and its impact on school financing.

[29] For example, in Wilmington, Delaware, school district property taxes comprise only 35 percent of all property taxes, compared to approximately 60 percent of property tax collections in suburban school districts. Since the property tax rate for schools is about the same in Wilmington as in the suburbs, total property taxes are almost twice as high in Wilmington as in the incorporated municipalities of suburban New Castle County. Similarly, in North Carolina, cities in metropolitan areas allocate 34.7 percent of their property taxes to schools, while counties containing no cities over 10,000 population allocate approximately one-half of their property tax collections for schools. In New Hampshire, the central city of Manchester allocates 42.8 percent of its property tax to education, the suburbs 63.2 percent, and rural areas 72.1 percent. Thus, these three states follow the same pattern.

B. Per Capita and Per Pupil Income

Per capita and per pupil income data on a school district level, as shown in Table II-8 and Figure II-8, are based on Adjusted Gross Income (AGI) data from the Internal Revenue Service for 1966.[30/] Per capita and per pupil income have been computed by school district for all states in the study with the exception of New York and California.

In general, as shown in Table II-9, average per capita income in suburban districts is above that of central cities.[31/] This means that if state funds were distributed on the basis of fiscal need as measured by per capita income, central cities would have an advantage over suburbs.

[30/] Per capita and per pupil income were derived by matching the 1966 Internal Revenue Service computer tape containing personal income tax return data according to zip code with the zip codes of individual schools from the 1968-1969 Office of Education Public Elementary and Secondary School Directory. Since with this process, only about 80 percent of the zip codes can be matched with the appropriate schools, the balance of the process involved manually allocating zip codes to school districts through the use of school district maps obtained from the Office of Education and zip code boundary maps obtained from the U.S. Post Office. With regard to central cities with low-income downtown areas which report high income tax returns because of the location of banks, tax attorneys and accountants in this part of the city, returns above $10,000 were allocated among the school districts in the entire metropolitan area. Population estimates were obtained by adjusting the number of exemptions on tax returns filed by those over 65 years of age and estimating the percent of population not listed as dependents. These values were compared, in the case of school districts coterminous with the boundaries of other political jurisdictions, to 1966 population estimates made by the Bureau of the Census and to the 1970 Census of Population values for large cities and suburbs, in order to determine the reliability of the methodology.

[31/] The State of Washington is the only exception. There, per capita income of the central city school districts is 5.6 percent higher than that of the suburbs.

TABLE II-8

FISCAL MEASURES OF ABILITY TO PAY

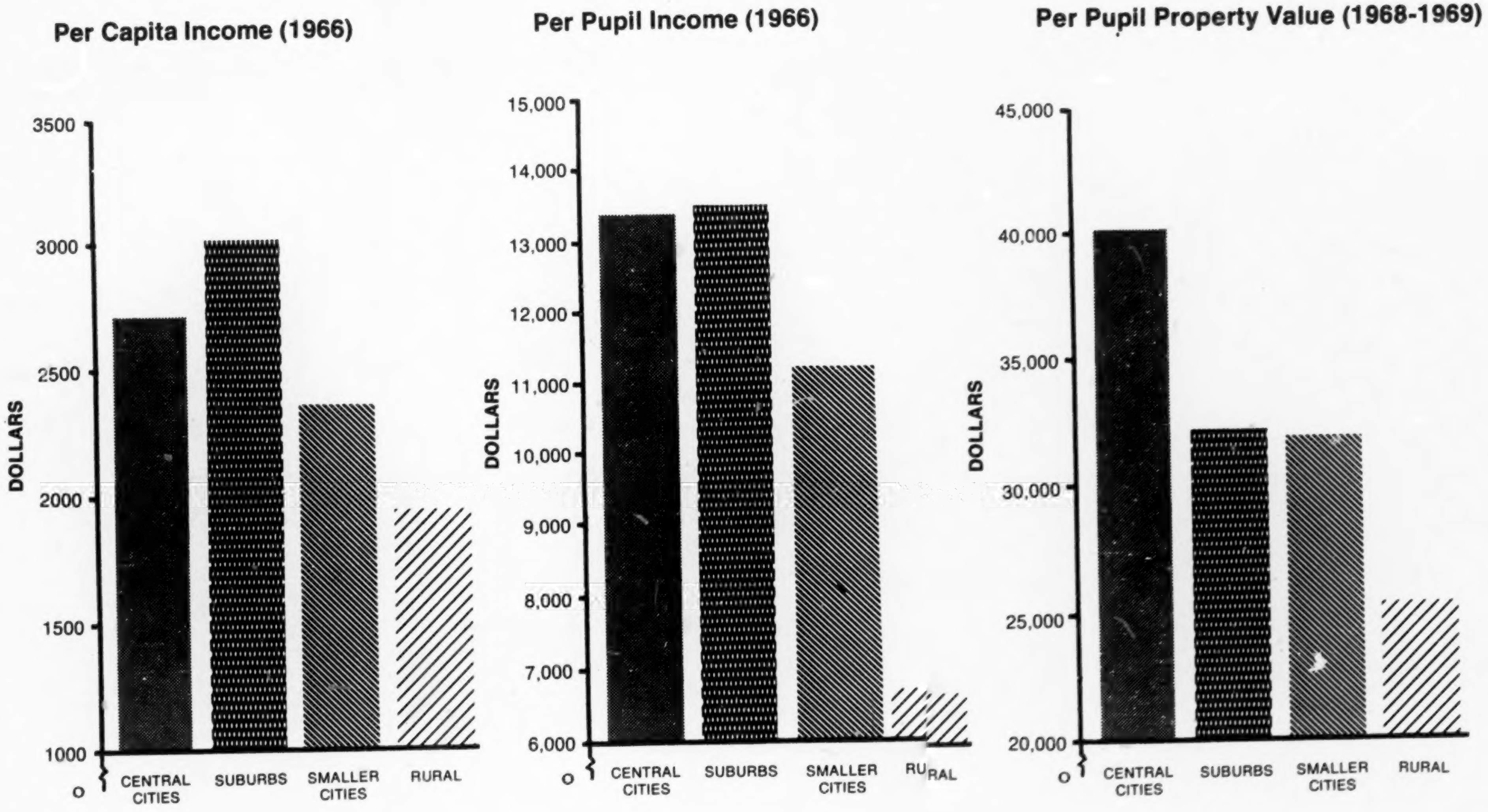
					A STATES		B STATES	
	Per Capita[1] Income (1966)	Per Capita Income Coefficient of Variation	Per Pupil[1] Income (1966)	Per Pupil Income Coefficient of Variation	Per Pupil* Property (1968-1969)	Per Pupil Property Coefficient of Variation	Per Pupil[2] Property (1968-1969)	Per Pupil Property Coefficient of Variation
Central Cities	$2,692	.08	$13,365	.12	$40,179	.29	$48,837	.27
Suburbs	3,028	.26	13,441	.43	32,712	.51	36,136	.58
Smaller Cities	2,431	.14	11,354	.29	32,380	.24	33,293	.40
Rural Areas	1,974	.18	6,655	.53	25,738	.38	27,467	.56
Total	2,496	.23	11,040	.42	32,453	.38	38,926	.45

[1] A States: Washington, Michigan, North Carolina, Delaware, and New Hampshire

[2] B States: Includes A states plus Colorado, California, and New York -- only cities with populations over 250,000

FIGURE II-8

FISCAL MEASURES OF ABILITY TO PAY



NOTE: Data from the states of Delaware, North Carolina, Washington, Michigan, and New Hampshire.

TABLE II-9

PER CAPITA ADJUSTED GROSS INCOME (1966) OF SAMPLE DISTRICTS[1/]

States	Central Cities	Suburbs	Smaller Cities	Rural	State Average
Delaware	$2,794	$3,429	$2,627	$1,997	$2,793
North Carolina	2,525	-	1,739	1,586	1,896
Washington	3,035	2,875	2,375	2,216	2,559
Michigan	2,551	3,158	3,074	2,149	2,612
Colorado	2,597	2,650	2,184	1,738	2,367
New Hampshire	2,281	2,314	2,276	2,154	2,248
Weighted Mean	2,651	2,903	2,392	1,937	2,466
Unweighted Mean	2,630	2,885	2,379	1,973	2,412

[1/] Per capita income not computed for California and New York.

However, if per pupil income is used as the measure of ability to pay, the central cities lose this advantage.

Differences in per capita and per pupil income between central cities and suburbs are due to two factors: demographic characteristics and non-public school enrollment. Households with children in the school age group, particularly white households, have been migrating from the central cities to the suburbs, with the result that children are a smaller fraction of the total population in central cities than they are in the suburbs.[32] In addition, in states where non-public school enrollment data were available by school district, central cities were found to have a much higher proportion of non-public school enrollment than their suburbs.[33] Rural areas would be the major beneficiaries of any allocation formula utilizing a per pupil income measure, since per pupil income is less than half the central city or suburban average.[34]

A comparison of per capita income and per pupil property wealth, as shown in Table II-10, indicates a dramatic difference between income and property wealth, particularly if viewed in terms of criteria for measuring

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[32] For example, 27.4 percent of Wilmington's total population in 1970 is five to nineteen years of age. In the balance of the urbanized part of the SMSA, this percentage is 30.8 percent. In the city of Detroit, 27.2 percent of the population is in the five to nineteen year-old category, compared to 32.4 percent in the balance of the SMSA, a difference of over 19 percent. These differences result in considerably higher per pupil income and property values compared to per capita income and property values.

[33] In Wilmington, 33.7 percent of all enrollment is in non-public schools, compared to the suburban average of 18.9 percent, a difference of about 78 percent. In Detroit, 24.5 percent of students attend non-public schools, while suburban non-public school enrollment is 19.4 percent.

[34] Rural areas have very low non-public school enrollment and larger household size than do urban areas.

TABLE II-10

INCOME AND PROPERTY VALUE RELATIONSHIPS BETWEEN CENTRAL CITIES AND SUBURBS

States	Per Capita Income (1966)			Per Pupil Property Base (1968-1969)		
	Central Cities	Suburbs	Percent Difference	Central Cities	Suburbs	Percent Difference
Delaware	$2,794	$3,429	-18.5%	$30,067	$25,633	17.3%
North Carolina	2,525	-	-	40,109	-	-
Washington	3,035	2,875	5.6	64,106	34,254	87.2
Michigan	2,551	3,158	-19.2	33,616	33,312	0.9
Colorado	2,597	2,650	- 2.0	48,800	29,290	66.6
New Hampshire	2,281	2,314	- 1.4	35,449	23,548	50.5
Weighted Mean	2,651	2,903	- 8.7	42,331	32,072	32.0
Unweighted Mean	2,630	2,885	- 8.8	42,024	28,809	45.9

"ability to pay." As noted above, average per capita income in suburbs is generally above the central city average. However, property values are substantially higher in central cities.[35/] Although per pupil income in rural areas, as noted above, is less than half that of the suburbs, per pupil property values are only 27.1 percent lower. Rural districts would therefore benefit from an allocation formula based on any of the fiscal measures discussed in this section, but these districts would clearly re-receive the most funds if per pupil income were used as the distribution criterion.

In the case of smaller cities, all four of the fiscal criteria approximate the state average. Thus, in these districts, it makes little difference which fiscal measure is considered as the basis upon which state aid is distributed.

C. Minority Enrollment and Education Finance Characteristics

Many school administrators, federal officials, and academics have argued that the educationally disadvantaged student requires a higher cost educational program than the average student.[36/] The percentage of minority students has frequently been used as an index of the need for more

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[35/] In the state of Washington, where central city per capita income is 5.6 percent above that of the suburbs, the per pupil property wealth of the central cities is over 87 percent higher than the suburban average.

[36/] See,e.g., Levin, Guthrie, Kleindorfer, and Stout, "Capital Embodiment: A New View of Compensatory Education" in Education and Urban Society, Vol. III, No. 3, 1971, p. 301; Berke and Kelly, "The Financial Aspects of Equality of Educational Opportunity," Testimony presented to the U.S. Senate Select Committee on Equal Educational Opportunity, September 22, 1971.

educational resources.[37] Thus this study looks at the relationships between minority enrollment[38] and selected education finance characteristics such as revenues by source of funding and various fiscal capacity measures. These relationships are illustrated in Table II-11.

Of the total enrollment of all states in the study,[39] 27.7 percent are blacks or other racial minorities. In the central cities, 48.0 percent of all students are from minority groups, compared to 11.6 percent in suburban areas,[40] 18.7 percent in smaller cities, and 16.3 percent in rural districts.

The greatest variation is found among the suburban districts of all sample states; the least variation is among central city school districts.[41]

There is a significant positive correlation between total revenues for education and high minority enrollment and between local revenues and high minority enrollment. The relationship between federal revenues and

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[37] See, e.g., Berke _et al._, "Federal Aid to Public Education: Who Benefits?" U.S. Senate Select Committee on Equal Educational Opportunity, April 1971; Burke, Kelly, and Garms, _Educational Programs for the Culturally Deprived-Need and Cost Differentials_ (National Educational Finance Project, Special Study No. 3, Albany: 1970).

[38] Data obtained from U.S. Department of Health, Education and Welfare, Office of Civil Rights, _Directory of Public Elementary and Secondary Schools in Selected Districts: Enrollment and Staff by Racial/Ethnic Group_, Fall 1968, include American Indian, Negro, Oriental and Spanish-surnamed Americans.

[39] This section of the report includes analyses from eight states: Delaware, North Carolina, Washington, New York, Michigan, California, Colorado, and New Hampshire.

[40] The high suburban average is due in part to the inclusion of districts such as Highland Park, Inkster and Hamtramck in Michigan and De La Warr in Delaware as "suburban," although they have many of the characteristics of central cities.

[41] The coefficients of variation are 1.28 for the suburbs compared to .26 for central cities.

TABLE II-11

PERCENT MINORITY ENROLLMENT AND EDUCATION FINANCE CHARACTERISTICS
CORRELATION COEFFICIENTS
(1968-1969)

	Central Cities[1/] (n = 18)	Suburbs (n=159)	Smaller Cities (n = 163)	Rural Areas (n = 283)	All Sample Districts[2/] (n = 623)
Revenue (A + B States)					
Total Revenue Per Pupil	.44	-.05	-.14	-.26*	.28*
Local Revenue	.43	.02	-.03	-.33	.29*
State Revenue	.35	-.19**	-.22**	-.15	.03
State and Local	.43	-.08	-.19**	-.33*	.23*
Federal	.27	.42*	.26*	.46*	.49*
Fiscal Capacity Measures	(n = 9)	(n = 45)	(n = 83)	(n = 158)	(n = 295)
(A States)					
Per Capita Income**	-.65	-.13	-.15	-.70*	-.20**
Per Pupil Income	.20	.20	-.17	-.37*	.29*
Per Pupil Property*	-.81	.02	.01	-.30*	-.01

A States: Delaware, North Carolina, Washington, Michigan, New Hampshire

B States: California, New York, Colorado

1/ Include central cities of Delaware, New Hampshire, and North Caorlina

2/ Exclude county-wide urban districts of North Carolina

* 1 percent level of significance

** 5 percent level of significance

minority enrollment is even stronger, in large part due to the distribution of funds under Title I of the Elementary and Secondary Education Act.[42] These relationships reflect the fact that central cities generally have the highest revenue per pupil and also the highest proportion of minority enrollment.[43]

The pattern found between central city revenues and minority enrollment does not hold true for the other types of districts, however. In some suburbs, smaller cities, and particularly in rural areas, as the percent of minority enrollment rises, the total revenues and local revenues for education both tend to fall.[44]

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[42] Title I of the Elementary and Secondary Education Act of 1965: financial assistance to local educational agencies for the education of children from low income families or from families who are welfare recipients. Title I aid, which parallels the distribution of minority enrollment to a considerable extent, is highest in dollar terms in central cities, where it averages $35 per pupil, and lowest in suburban areas, amounting to only $8 per pupil. Rural districts receive an average of $28, smaller cities $22. Within categories of districts, the greatest differences in Title I aid, as in minority enrollment, are found among suburban and rural districts.

[43] Since central cities comprise 34.3 percent of total sample district ADA, these cities tend to dominate average values.

[44] Among the sample districts, only 7 of the 159 suburbs in the eight states studied have more than 50 percent minority enrollment. Of these seven communities, three have state and local revenues above their suburban average and four below their suburban average. An additional ten suburban school districts have 25 to 50 percent minority enrollment. Of these, three have below and seven have state and local revenues that are above their suburban average. It should be noted that quite a few suburban districts in the states of California and New York with minority enrollments of over 10 percent are both affluent and have exceptionally high educational expenditures. In California, these communities include Culver City (12.2 percent minority), Pasadena (38.6 percent), Santa Monica (20.7 percent), Palo Alto (10.0 percent), Berkeley (53.5 percent). New Rochelle, with 22.3 percent minority, is the principal example in New York State of a district with such characteristics. Thus the relationship between minority enrollment and total school revenues presents a very mixed pattern in suburban districts. In contrast, most rural areas with a high percentage of minority enrollment are both poor and have low expenditures for education. The correlation coefficient between total revenues and percent minority in rural areas is -.34.

There is also a negative correlation between per capita income and percent minority: the higher the income, the smaller the minority enrollment. This relationship is particularly strong in rural areas. However, there is a positive correlation between per pupil income and percent minority; this seemingly contradictory situation exists because areas of high minority enrollment tend to have more students in non-public schools and a lower percentage of population of school age. Finally, there is no significant correlation between per pupil property values and percent of minority students.

In sum, minority students in rural areas are distinctly at a disadvantage in obtaining revenues. In contrast, in urban areas, particularly in the larger cities, funds for education are frequently higher in areas with considerable minority enrollment.

IV. WHO PAYS FOR PUBLIC EDUCATION?

This section of the report is concerned with the disparities in tax burdens among various income groups for the support of public elementary and secondary education.[45/] This study examines both the state and local tax burdens for selected income groups in the states included in this study.[46/] Comparisons are made among the states and between the urban and rural areas within a particular state.[47/] Since most of the proposed

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[45/] Tax burden calculations include revenues for both current and capital expenditures.

[46/] States included in this aspect of the study are Delaware, Hawaii, North Carolina, and Washington (high aid states); California, Michigan, and New York (moderate aid states); and New Hampshire (low aid state).

[47/] The Department of Labor provides statistics on expenditure patterns for urban and rural non-farm households by region, which were utilized in this analysis to estimate expenditures for items subject to state and local taxes.

alternatives to the present method of financing education involve increasing the state share of public school funds, an analysis of the existing state tax structure for education is important in examining education finance characteristics.

The analysis consists of two parts: (1) An estimate of the direct and indirect taxes paid by households into the state general fund for elementary and secondary education, or into state funds earmarked for education. (This estimate excluded federal income tax offsets). (2) An estimate of the local taxes for education paid directly by households.[48]

A. State Taxes

All major state tax payments by households into the state general fund and special funds earmarked for education are calculated by income groups.[49] The analysis took into account that part of the corporate income tax and selected other taxes that are shifted to out-of-state residents, but it did not estimate the portion of corporate taxes shifted into each of the states studied. Thus total state tax burdens are somewhat understated in this analysis.

Average state tax payments to the state general fund and to earmarked funds for public education are shown by income groups in Table II-12. As this table shows, three states have regressive tax structures, two are essentially proportional, and three have progressive tax structures.

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[48] Detailed data are given for each state in Volume II.

[49] Households are grouped by money classes on the basis of demographic and regional distributions provided in the Department of Labor Survey of Consumer Expenditures and Income, July 1964. State personal income taxes, grouped by states on the basis of income as reported on tax returns, are converted for this study into household units which conform with the Department of Labor household unit size by income.

TABLE II-12

STATE TAXES FOR PUBLIC ELEMENTARY AND SECONDARY EDUCATION AS PERCENT OF MONEY INCOME[1/]

URBAN AND RURAL AREAS
(1968-1969)

STATE	$2,000-2,999	$3,000-3,999	$4,000-4,999	$5,000-5,999	$6,000-7,499	$7,500-9,999	$10,000-14,999	$15,000 and over
Delaware	1.2%	1.4%	1.5%	1.6%	1.8%	2.0%	2.2%	2.5%
Hawaii	3.7	3.7	3.4	3.4	3.5	3.5	3.4	3.9
North Carolina	1.6	1.8	1.8	2.1	2.3	2.5	2.8	3.6
Washington	3.1	3.1	2.8	2.7	2.5	2.4	2.1	1.5
Califonnia	1.1	1.3	1.2	1.2	1.2	1.2	1.5	2.1
Michigan[2/]	2.3	2.3	2.1	2.2	2.1	2.2	2.3	1.7
New York	1.5	1.8	1.8	1.8	1.8	1.8	2.0	3.2
New Hampshire	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4

[1/] Proportion of state general revenue taxes (and in some states, earmarked taxes) allocated for public elementary and secondary education.

[2/] There may be some discrepancies in the Michigan analysis, since state income tax data were available in a form that could not be readily adapted to the methodology used in computing tax burdens for the other states in this study.

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Low Income Households. State tax burdens for low income households tend to be relatively low in two high state aid states -- Delaware and North Carolina. They are high in the two other high aid states -- Hawaii (which has the highest state tax rate for low income households of all states in this study) and Washington. Low income households in New Hampshire (where the state contributes very little to education) and in California (a moderate aid state) pay the smallest proportion of their income for education of the low income groups in the states examined.

Moderate Income Households. In the $7,000 to $9,999 income class, state tax burdens are comparable in all states examined, with the exception of New Hampshire whose residents in this income class pay only 0.4 percent of personal income in state taxes for education. Hawaii has the highest rate for this category, at 3.5 percent, followed by North Carolina at 2.5 percent. High state aid states, as would be expected, have slightly higher state tax rates compared to the other states.

High Income Households. At the $15,000 and over income level, the same trends shown in the moderate income group are evident, with Hawaii's state taxes of 3.9 percent the highest and New Hamsphire's level of 0.4 percent the lowest. North Carolina taxes on high income households are 3.6 percent.

B. Local Taxes

Local taxes, primarily real property taxes,[50] are the major source of local tax revenue. These taxes, shown in Table II-13, have been allocated to income groups on the basis of the 1960 Census of Housing ratios of house value to income for one or more metropolitan areas in each state included in this aspect of the study, and on the University of Michigan 1968 Survey of Consumer Finances, which provides values of owner-occupied housing and rental payments according to family income.[51/] It is assumed for purposes of this analysis that the same house value/income relationships exist outside the metropolitan areas. The values computed for this study exclude personal property taxes paid by homeowners.[52/] Real and personal property taxes paid by industrial and commercial enterprises are also excluded. Non-residential property taxes are in part shifted to consumers, both within and outside the state, and are in part absorbed by the owners of the property. Since the calculations in this report have excluded this effect, the values derived understate the total burden of the property tax

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[50] Although the major share of property taxes are derived from taxes on real property, a number of states also tax tangible personal property, primarily commercial and industrial goods, for education. Tangible personal property amounted to 13.4 percent of all property in the eight states studied. As a result, the effect of local taxes is understated in those states which have a tax on tangible personal property.

[51/] An examination of effective tax rates for homeowners and renters for the years of 1960 and 1968 indicated no substantial differences in tax payments as a function of income. Therefore, values derived from this analysis are limited to homeowner-income to house-value ratios, as shown in the following example: if in a particular urban area, an average household earning $10,000 owns a $16,000 home, and the effective property tax rate is $2.00 per $100 of market value, the household pays $320 in school property taxes, or 3.2 percent of its total household income as defined by the Bureau of the Census. In the view of the authors of this study, house value to income ratios as shown by the Bureau of the Census for the higher income families are too low, particularly in suburban areas. This tends to underestimate taxes paid by middle and upper income families. This study assumes that the property tax on improvements is shifted forward to tenants. See Netzer, Economics of the Property Tax (The Brookings Institution: 1966), Table III-8.

[52/] As shown in the 1967 Census of Government, Vol. 2, Table 22, only a small fraction of personal tangible property taxes involve household goods.

TABLE II-13

LOCAL TAXES FOR PUBLIC ELEMENTARY AND SECONDARY EDUCATION AS PERCENT OF MONEY INCOME

URBAN AND RURAL AREAS

STATE	$2,000-2,999	$3,000-3,999	$4,000-4,999	$5,000-5,999	$6,000-7,499	$7,500-9,999	$10,000-14,999	$15,000 and over
Delaware	3.4%	2.3%	2.0%	1.6%	1.4%	1.3%	1.0%	0.9%
Hawaii	----------------None assessed for education purposes-------------------------							
North Carolina	2.0	1.6	1.2	1.1	0.9	0.9	0.9	0.8
Washington	3.4	2.6	2.0	1.8	1.6	1.4	1.2	1.0
California	6.9	5.0	4.0	3.3	2.8	2.4	2.0	1.6
Michigan	5.6	4.2	3.2	2.6	2.4	2.1	1.7	1.4
New York	11.0	8.0	6.5	5.3	4.5	3.8	2.9	2.2
New Hampshire	8.5	6.5	5.4	4.7	3.9	3.4	2.4	2.0

on households in all income groups.[53]

Many low income families rent public or subsidized housing which may be tax exempt. In addition, a number of states reduce the property taxes of low income homeowners 65 years of age or over. The values for the average property tax burden for low income households shown in the accompanying tables may consequently be higher than the actual burden on these income groups.[54] In view of these limitations in computing the burden of property taxes, the principal function of this analysis should be viewed as enabling comparisons to be made among and within states.

In addition to the property tax, other local taxes are allocated for education, such as sales taxes in Michigan, utility taxes in a few cities in New York State, capitation taxes in Delaware, and lottery profits in New Hampshire. The effect of these taxes is included in estimating local tax burdens.

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[53] Industrial and commercial property varies from 22.1 percent of real property in Washington to 37.4 percent of real property in New York. In states examined for this study, the majority of personal property taxes are on industrial and commercial goods. To determine the impact of commercial and industrial property, an analysis of the inclusion of this item was made for the States of North Carolina and Washington. It was found that the tax burden of low income urban households in North Carolina increased from 3.8 percent to 4.0 percent, a five percent increase. For urban households, taxes increased from 4.3 percent to 4.7 percent, a nine percent increase. This indicates that adding commercial and industrial property, based on the assumption that part of the tax is paid by owners of the business enterprises, increases the tax burden relatively more for higher income households than for lower income households. (See Vol. II, North Carolina and Washington.) However, the overall regressive pattern of the property tax is not affected by this addition. Concurrently, homeowners, particularly those in high income tax brackets, can offset a considerable part of the property tax by deducting their tax payments from federal income taxes. (In states where data was available, state income tax deductions were included in the computation of state income tax burdens.)

[54] A number of additional factors may contribute to the highly regressive pattern shown by the use of Census of Housing data. These include the following: (1) Census values consider only current income, rather than income over time. It has been shown that expenditures for housing, as noted in Netzer, op.cit., are generally governed by their long term income expectation. (2) The imputed income values of owner-occupied housing is not estimated.

Local property tax rates, even if the effect of property taxes paid by industrial and commercial enterprises is considered, are found to be regressive. The percent of income paid in local property taxes varies primarily with effective school district tax rates, since the house value to income ratios and rent as a percentage of income does not appear to deviate sharply between metropolitan areas in the states examined. As a result, the highest share of income paid through all local taxes for education is paid in New York State, where the burden ranges from 10.9 percent of income in the $2,000 to $2,999 household income group to 2.2 percent for households with incomes over $15,000. The inclusion of property taxes paid by industry and commerce as well as on other personal property, as noted previously, will result in somewhat higher local school tax burdens, and also result in a slightly less regressive total local property tax structure. It is of interest to note that local property taxes are slightly lower in New Hampshire than in New York, despite the fact that about 85 percent of all school revenues in New Hamsphire is derived from the property tax compared to approximately half in New York.[55]

C. Combined State and Local Taxes

As indicated in Table II-14 and Figure II-14, the combined state and local tax pattern varies from a "U" effect (lowest taxes for middle income

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[55] Although differences in house value to income ratios among cities are not great in 1960, the ratios were higher in the New York metropolitan area than in New Hampshire.

TABLE II-14

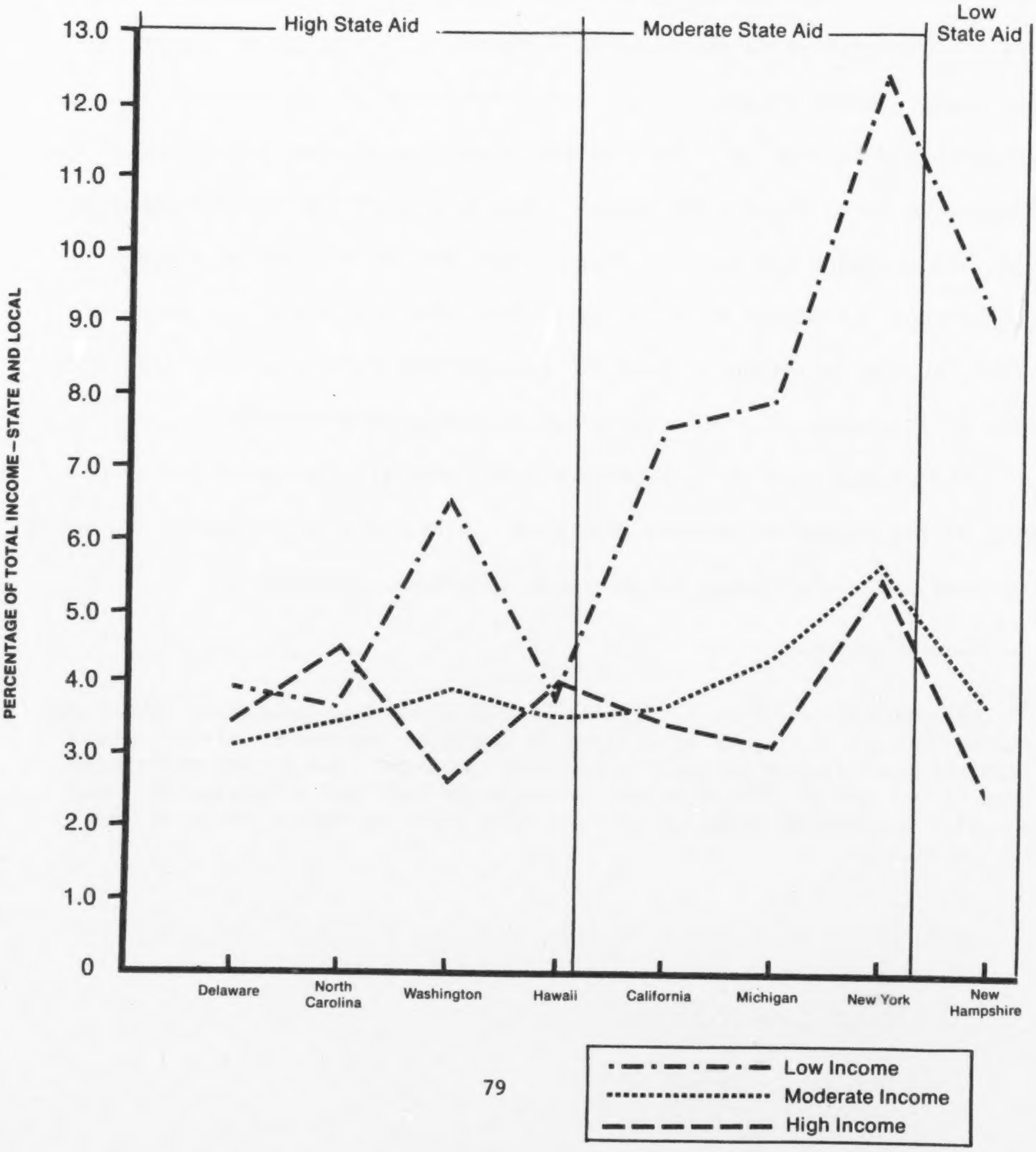
COMBINED STATE/LOCAL TAXES FOR PUBLIC ELEMENTARY AND SECONDARY EDUCATION AS PERCENT OF MONEY INCOME

URBAN AND RURAL AREAS
(1968-1969)

STATE	$2,000-2,999	$3,000-3,999	$4,000-4,999	$5,000-5,999	$6,000-7,499	$7,500-9,999	$10,000-14,999	$15,000 and over
Delaware	4.6%	3.7%	3.5%	3.2%	3.2%	3.3%	3.2%	3.4%
Hawaii	3.7	3.7	3.4	3.4	3.5	3.5	3.4	3.9
North Carolina	3.6	3.4	3.0	3.2	3.2	3.4	3.7	4.4
Washington	6.5	5.7	4.8	4.5	4.1	3.8	3.3	2.5
California	8.0	6.3	5.2	4.5	4.0	3.6	3.5	3.7
Michigan	7.9	6.5	5.3	4.8	4.5	4.3	4.0	3.1
New York	12.5	9.8	8.3	7.1	6.3	5.6	4.9	5.4
New Hampshire	9.1	7.1	5.9	5.2	4.4	3.8	2.8	2.4

FIGURE II-14

COMBINED STATE/LOCAL TAX BURDEN FOR EDUCATION BY SELECTED INCOME GROUPS 1968-1969



groups) in Delaware and North Carolina to a generally regressive pattern in the other states.

Combined state and local tax rates for selected income groups, weighted by the urban and rural population of each state, are shown in Table II-15. State taxes allocated for primary and secondary education are proportional up to the $10,000 household income category, progressive for higher income groups. Local taxes, dominated by the property tax, are consistently regressive. The combined state-local taxes for education are regressive up to the $15,000 group. However, taxes for the highest (over $15,000) category are somewhat higher than for the $10,000 to $14,999 income group. It should be noted again that these estimates are conservative. An approximation is that the average household pays over five percent of its income for elementary and secondary education.[56]

The states with the highest over-all taxes for education are at each ends of the income spectrum -- New York , with the highest income and North Carolina, with the lowest income among the states examined.

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[56] The computation of an average household education tax burden, which excludes federal funds for education, is based on the Bureau of the Census 1968 national family income distribution pattern. The Bureau calculates that $48.35 per $1,000 of personal income in 1967 was allocated to local schools, a somewhat lower value than this study estimates based on the sample states.

TABLE II-15

COMBINED TAX BURDEN FOR SAMPLE STATES[1]
(1968-1969)

	Income Groups							
	$2000 2999	$3000 3999	$4000 4999	$5000 5999	$6000 7499	$7500- 9999	$10,000 14,999	$15,000 and over
State Taxes	1.8%	1.8%	1.7%	1.8%	1.8%	1.8%	1.9%	2.5%
Local Taxes	7.0	5.2	4.2	3.5	3.0	2.6	2.1	1.6
Combined[2] Taxes	8.8	7.0	5.9	5.3	4.8	4.4	4.0	4.1

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[1] Delaware, Hawaii, North Carolina, Washington, California, Michigan, New York and New Hampshire. Includes urban and rural areas of states. Values weighted by population of each state.

[2] The average household combined tax burden based on the distribution of money income for 1968 by the Bureau of Census is 5.05 percent.

PART II

INTER-STATE AND INTRA-STATE EXPENDITURE COMPARISONS

I. EXPENDITURE DIFFERENTIALS BY FUNCTION

This section of the report deals with differences in expenditures among school districts by function (e.g., plant operation and maintenance, instructional personnel, and transportation). It analyzes data from six states -- Delaware, North Carolina, and Washington (high aid states) and New York, Michigan, and California (moderate aid states).

A. Disparities in Expenditure Levels

Per pupil expenditures among states included in the study, as shown in Table II-16 and Figure II-16, vary considerably, from $567 in North Carolina to $1,229 in New York.[55] Total current operating expenditures per pupil are higher in central city districts compared to suburbs in all states except Michigan. If federal funds are excluded, expenditures in the suburbs of the State of New York exceed average expenditures of central cities in that state. However, in the remaining four states, central city expenditures exceed the suburban average even with the exclusion of federal funds. The major factor resulting in expenditure differentials between central cities and suburbs in all states, including Michigan, is the level of teacher expenditures, discussed later in this chapter.

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[57] Per pupil expenditures by function for each type of district by state are shown in Tables II-25 through II-28.

TABLE II-16

TOTAL STATE EXPENDITURES BY FUNCTION
(1968-1969)

	Delaware	North Carolina	Washington	California	Michigan	New York
Total Instructional	$493	$358	$544	$541	$578	$ 785
Principals & Supervisors	27	25	34	34	46	80
Teachers	394	305	400	410	455	625
Other Instructional Personnel	26	8	41	70	35	21
Other Instructional Expenditures[1]	46	20	69	27	42	59
Total Non-Instructional	157	97	155	125	151	242
Administration	32	15	22	22	24	36
Transportation	30	13	24	12	17	54
Plant Operation	67	26	70	56	79	108[2]
Plant Maintenance	12	16	24	26	25	
Other Non-Instructional[3]	16	27	15	9	6	44
Total Instructional & Non-Instructional	650	455	699	666	729	1,027
Total Fixed Charges & Other Miscellaneous Services	55	112	68	73	100	202
Fixed Charges[4]		12	32	40		181
Community Services & Other Costs	6	65	7	15	35	21
State Payment for Teacher Pension Plans & Other Benefits	49	35	29	18	65	
Total COE	$705	$567	$767	$739	$829	$1,229

[1] Includes clerical staff, supplies, textbooks, library

[2] Includes both Plant Operation and Maintenace

[3] Includes health, food services, attendance

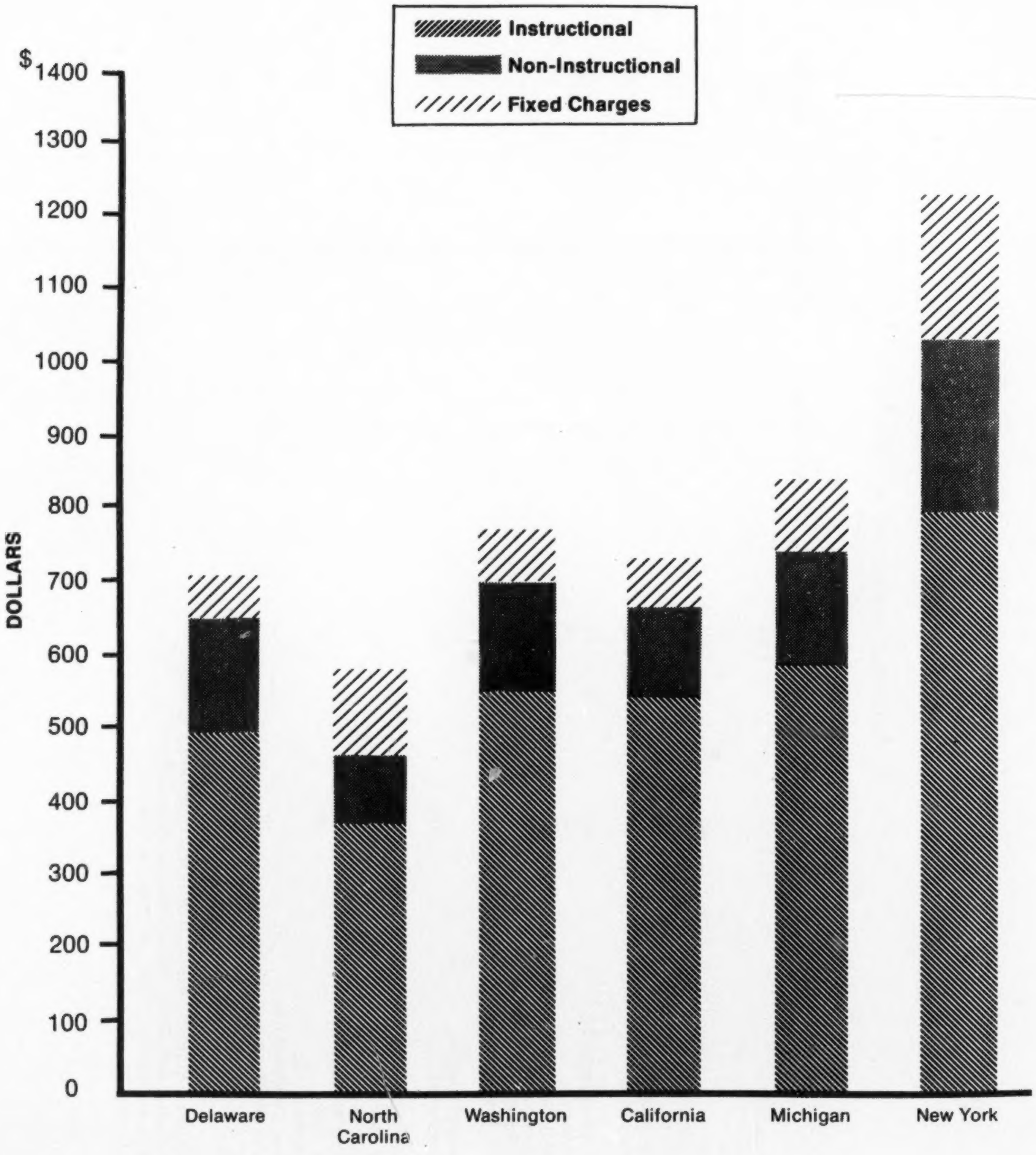
[4] Includes benefits for teachers, such as social security, paid directly by school districts

FIGURE II-16

TOTAL STATE EXPENDITURES BY FUNCTION

Dollars Per Pupil

(1968-1969)



Again with the exception of Michigan, smaller cities in the states in this study have lower total expenditures than the central cities, while rural areas spend less than any other types of school district.[58]

B. Proportion of Expenditures by Function

As noted above, total per pupil expenditures vary considerably among states. In the following pages, this report tries to determine whether the proportion of the budget each state allocates for specific functions also shows considerable inter-state and intra-state (by type of district) deviation.

1. Instructional Expenditures. As shown in Table II-17 and illustrated in Figure II-17, expenditures for instructional functions, excluding fixed costs for pensions and other teacher benefits, vary considerably --from 63.1 percent of the total education budget in North Carolina to 73.2 percent in California. When total instructional expenditures are examined in terms of components, the following is found:

(1) The proportion of budget allocated for teachers, with the exception of New York, shows little variation among states, despite the fact that dollars per pupil expended for teachers vary sharply.

(2) The proportion of the budget allocated for principals and supervisors shows a much greater range than that

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[58] North Carolina is an exception to this expenditure pattern. There, the high cost of transportation in rural areas results in higher total expenditures in rural areas compared to smaller cities, although rural areas spend $20 less per pupil for instructional expenditures than these cities.

for teachers.[59]

(3) Other instructional personnel vary considerably among the states in percentage of total expenditures.[60]

(4) Other instructional expenditures (supplies, textbooks, etc.) also vary in their percent of the total budget, Washington having the highest proportion and North Carolina the lowest.[61]

2. Non-instructional expenditures. Non-instructional expenditures, which do not suffer from the same definitional problems as instructional expenditures, vary from 16.9 percent in California to 22.3 percent in Delaware. An examination of the components shows the following:

(1) Transportation costs vary as a proportion of the total budget from 4.4 percent in New York to as low as 1.6 percent in California

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[59] Expenditures for principals and supervisors range from 3.8 percent of current operating expenditures in Delaware to 6.5 percent in New York. Part of this difference may be attributable to how each state defines principal and supervisor and also classroom teacher. (Note that in New York, "other instructional personnel" is only 1.7 percent of all expenditures while in California it is 9.0 percent.)

[60] The range in "other instructional personnel" is from a low 1.4 percent in North Carolina to a high of 9.0 percent in California. As noted in connection with principals and supervisors, part of the variation may be due to differences in definition.

[61] High "other instructional" expenditures in Washington appear to be due to two items: clerical staff, $28 and supplies, $29 per pupil. In contrast, North Carolina spends only $6 per pupil for clerical staff. However, it should be pointed out that in North Carolina miscellaneous educational expenditures, which would include "other instructional" expenditures, were grouped under "other costs", since precise difinitions of what this item included could not be ascertained.

TABLE II-17

STATE EXPENDITURES BY FUNCTION AS SHARE OF TOTAL COST

	Delaware Percent	North Carolina Percent	Washington Percent	California Percent	Michigan Percent	New York Percent
Total Instructional	69.9%	63.1%	70.9%	73.2%	69.7%	63.9%
Principals & Supervisors	3.8	4.4	4.4	4.6	5.5	6.5
Teachers	55.9	53.8	52.1	55.5	54.8	50.9
Other Instructional Personnel	3.7	1.4	5.4	9.5	4.2	1.7
Other Instructional Expenditures [1]	6.5	3.5	9.0	3.6	5.2	4.8
Total Non-Instructional	22.3	17.1	20.2	16.9	18.2	19.7
Administration	4.5	2.6	2.9	3.0	2.9	2.9
Transportation	4.3	2.3	3.1	1.6	2.1	4.4
Plant Operation	9.5	4.6	9.1	7.6	9.5	8.8 [2]
Plant Maintenance	1.7	2.8	3.1	3.5	3.0	-
Other Non-Instructional [3]	2.3	4.8	2.0	1.2	0.7	3.6
Total Instructional & Non-Instructional	92.2	80.2	91.1	90.1	87.9	83.6
Total Fixed Charges & Other Miscellaneous Services [4]	7.8	19.8	8.9	9.9	12.1	16.4
Fixed Charges	0.8	2.1	-	5.4	-	14.7
Community Services & Other Costs	-	11.5	5.1	2.0	4.2	1.7
State Payment for Teacher Pension Plans & Other Benefits	7.0	6.2	3.8	2.5	7.9	-
Total COE	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

[1] Includes clerical staff, supplies, textbooks, library

[2] Includes both plant operation and maintenance

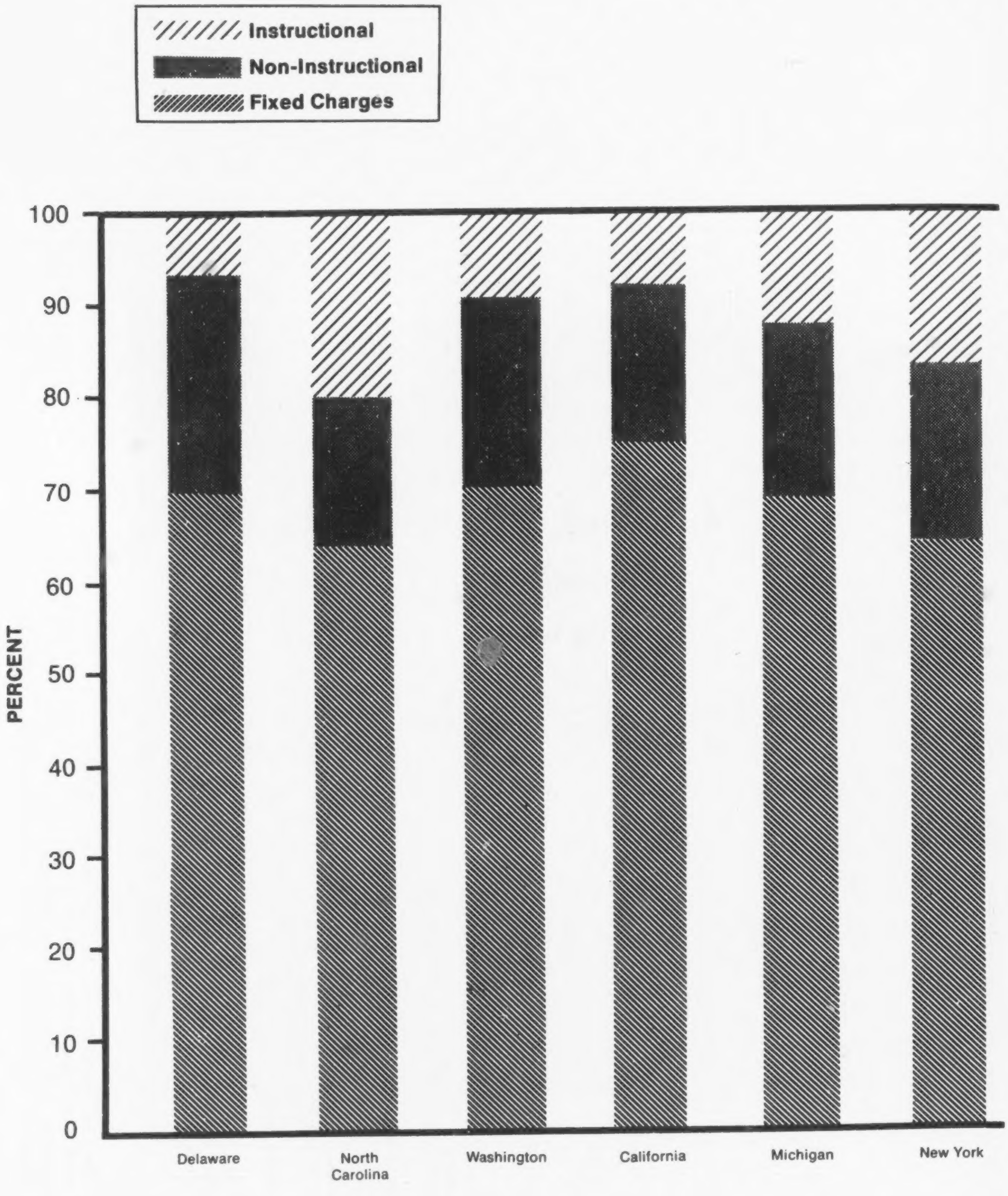
[3] Includes health, food services, attendance

[4] Includes benefits for teachers, such as social security, paid directly by school districts

FIGURE II-17

STATE EXPENDITURES BY FUNCTION AS SHARE OF TOTAL COST

(1968-1969)



(2) Administrative expenses, with the exception of Delaware (which is high), show little variation among the states.

(3) The proportion of the budget allocated for plant operation varies widely among the states. Delaware, Michigan and Washington are all above 9 percent, California 7.6 percent, and North Carolina, a low 4.6 percent.[62] Perhaps the warmer climate is a factor in the low cost of plant operation in North Carolina and California relative to other states.

(4) Plant maintenance costs do not vary substantially among the states.

3. Fixed charges and other miscellaneous services. The proprotion of current operating expenses allocated to this item varies sharply from 19.8 percent in North Carolina and 16.4 percent in New York to only 7.8 percent in Delaware. These differences are due to a number of factors, primarily those related to the level of teacher benefits. Each state has its own arrangements as to the type of benefit and the

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[62] New York's expenditures for plant operation are combined with those for plant maintenance.

share of the total cost that is the responsibility of the state government.[63/]

The above analysis indicates that the proportions of the total budget allocated for major functions, particularly for teachers, are not substantially different among the states even though the dollars per pupil expended for these items differ sharply. In contrast, when the expenditures by function are examined by type of district, instructional expenditures as a proportion of the total budget were found to vary considerably.

C. Impact of Expenditure Differentials Among Districts by Function

As previously noted, the lack of common definitions and standard accounting practices among states makes comparisons of expenditures by function difficult. However, an examination of this aspect is somewhat more reliable among districts within a state than among states.

As shown in Table II-18, there are substantial differences in total expenditures between central city, suburban, and rural districts.

Central Cities/Suburbs. The average difference in expenditures between central cities and suburbs in the six states analyzed in this section of the report is $110 per pupil. Of this differential, about 80 percent can be accounted for by differences in instructional person-

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[63/] In New York, all employee benefits are paid by the local school district, while in Delaware, it is primarily a state function. In New York, fixed charges are 14.7 percent of current operating expenditures, while in Delaware, they are only 7.8 percent. As noted previously, in North Carolina, high "other costs" are due to the inclusion of items which could not be allocated to specific instructional functions. Thus, it is liekly that part of "other costs" are, in fact, items which should be included in instructional expenditures rather than in this item.

TABLE II-18

PER PUPIL EXPENDITURE DIFFERENTIALS BY FUNCTION - ALL SAMPLE DISTRICTS
(1968-1969)

	Central Cities[1]	Suburbs	Rural	Central Cities/Suburbs		Central Cities/Rural	
				Diff. in $ Per Pupil	% of COE	Diff. in $ Per Pupil	% of COE
Total Instructional	$689	$619	$466	$ 70	63.6%	$223	75.1%
Principals & Supervisors	61	45	31	16	14.5	30	10.1
Teachers	533	467	367	66	60.0	166	55.9
Other Instructional Personnel[2]	654	567	427	87	79.1	227	76.4
Other Instructional Expenditures	35	52	39	(-17)	(-15.4)	(-4)	(-1.3)
Other Instructional Staff	60	55	29	5	4.5	31	10.4
Total Non-Instructional	179	168	148	11	10.0	31	10.4
Administration	29	28	23	1	0.9	6	2.0
Transportation	30	22	38	8	7.3	(-8)	(-2.7)
Plant Operation	66	71	48	(-5)	(-4.5)	18	6.0
Plant Maintenance	32	26	19	6	5.4	13	4.4
Other Non-Instructional	22	21	20	1	0.9	2	0.7
Total Fixed Charges & Other Miscellaneous Services[3]	124	95	81	29	26.4	43	14.5
Total COE	$992	$882	$695	$110	100.0%	$297	100.0%

[1] Includes cities with populations over 250,000. If Central City current operating expenditures (COE), include cities over 50,000 in Delaware, New Hampshire and North Carolina, Central City COE from $992 per pupil to $973. Most of the $19 differences is attributable to higher instructional personnel costs in cities over 250,000

[2] Teachers, principals and supervisors, other instructional staff.

[3] Excludes state-paid benefits.

nel costs, excluding fixed charges. If it is assumed that 60 percent of fixed charges are for instructional personnel benefits -- probably a conservative estimate -- almost the total expenditure gap between central cities and suburbs is explained by differences in both salary and benefit payments to classroom teachers, principals and supervisors.[64]

Non-instructional expenditure differentials between central city and suburban districts are relatively minor, the costs for these items averaging $179 for central cities and $168 for suburban school districts. Expenditures for transportation are consistently higher in suburbs relative to central cities with the exception of New York City, which has very high transportation costs.[65] In every state, plant maintenance costs are higher in the central cities than in any of the other types of districts.

Central Cities/Rural Areas. The same general pattern exists for cost differentials between central cities and rural districts across the six states. Even if fixed charges are excluded, about 77 percent of the $297 difference in total expenditures between cities and rural areas is attributable to salaries for classroom teachers, principals and supervisors.

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[64] Employee benefits increase as average salaries increase, but not in direct proportion, since certain expenditure items, such as social security payments, have maximum ceilings.

[65] The high expenditures for this item in New York City are explained by a number of factors. First, 9 percent of all regular students are bused -- a high proportion for central cities. In addition to these students, 11,000 handicapped students are bused to both public and private schools. The third factor affecting the high cost of transportation is the high salary/fringe benefit structure for bus drivers, which exceeds that of the balance of New York State.

A state-by-state comparison of differences in total expenditures between central cities and rural areas, compared to differences in instructional staff expenditures, is shown in Table II-19. As the data in this table indicate, between 68.7 percent and 100.0 percent of the total difference in expenditures is due to expenditures for salaries.

The difference in non-instructional expenditures between central cities and rural areas is only $31. Among non-instructional items, transportation costs in every state studied are highest in rural areas.

Comparing all urban (central city, smaller city, and suburban) districts to rural districts, plant operation and maintenance costs are substantially lower in rural areas, more than offsetting the higher cost of transporting students in rural districts. In every state, plant maintenance costs are higher in the central cities than in any of the other types of districts.

The above analysis demonstrates that if there are judicial or legislative pressures to reduce dollar expenditure differentials between school districts within states, the focus will have to be on reducing the gap in expenditures for instructional personnel. Non-instructional items show little dollar variation within states, although there are considerable differences among the states.

TABLE II-19

IMPACT OF INSTRUCTIONAL STAFF EXPENDITURES ON CENTRAL CITY-RURAL EXPENDITURE DIFFERENTIALS (1968-1969)

State	Differences in COE[1] Central Cities Rural Districts	Differences in Instructional Staff Expenditures[2] Central Cities Rural Districts	Percent Instructional Staff Expenditure Difference of COE
Delaware	$195	$192	98.5%
North Carolina	31	55	177.4[3]
Washington	131	94	71.8
California	63	63	100.0
Michigan	182	125	68.7
New York	245	238	97.1

[1] Excludes employee benefits paid directly by the state.

[2] Includes teachers, other instructional personnel, principals and supervisors.

[3] Exceeds 100 percent, primarily because of higher transportation costs in rural areas.

II. EFFECT OF TEACHER CHARACTERISTICS ON EXPENDITURE DIFFERENTIALS

Previous sections of this chapter have already noted that expenditures for teachers are the major cause for inter-state and intra-state expenditure differentials. This section examines the major factors which contribute to the differences in teacher expenditures: pupil-teacher ratios, teacher education and experience, starting salaries and salary increments.

A. Pupil-Teacher Ratios[66]

In four of the six states included in this portion of the study,[67] central cities are found to have lower pupil-teacher ratios than suburbs or any other type of district. In Michigan and Washington, the opposite is the case. This explains the low teacher expenditure level in Detroit compared to its suburbs. Rural areas, if California is excluded, have the highest pupil-teacher ratios.[68]

Five of the six states show relatively little variation in pupil-teacher ratios among types of districts within the state.[69] However, within suburban districts of most of these states, sharp differences in pupil-teacher ratios are frequently found. Generally, affluent suburban school districts have much lower pupil-teacher ratios than poorer suburban districts.

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[66] Inter-state pupil-teacher comparisons should be viewed as somewhat unreliable because definitions of classroom teachers are not consistent. For example, New York classifies as classroom teachers such professionals as guidance counselors, classified by most of the other states as "other instructional staff."

[67] The six states analyzed in this section of Chapter II are Delaware, North Carolina, Washington, California, Michigan and New York.

[68] Data on numbers of teachers provided by the California Teachers Association for this report, since such data were not made available by the State Education Department, appear to underestimate the number of teachers in school districts, particularly in urban areas.

[69] The exception is Delaware.

Central city teachers, as shown in Table II-20, have more years of experience than suburban teachers in all states except New York.[70] The average difference, examining this relationship across all states, is approximately 1.3 years. In Delaware and Michigan, however, the gap is 2.5 years. Rural teachers (with the exception of Michigan) also have less experience than those in central cities. Since teacher salaries rise with seniority, this helps explain why per pupil expenditures are higher in central cities than in other categories of school districts.

The differences in advanced degrees held by teachers in different type of districts present a more erratic pattern (see Table II-21). In two states (Delaware and California), the proportion of central city teachers with advanced degrees is less than in the suburbs, and in three states (Washington, Michigan, and New York), the proportion of teachers with advanced degrees is higher in the central cities. Salaries also tend to rise with degree status. However, because of the mixed distribution pattern the education level of teachers does not have a uniform impact on expenditure disparities between central cities and suburbs for the sample as a whole.

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[70] This is not unexpected, since growing suburban communities probably hire a greater percentage of new teachers with little experience than the cities.

TABLE II-20

AVERAGE TEACHER EXPERIENCE IN YEARS (1968-1969)

	Central City	Sub-urban	Percent Difference Central City/Suburb	Rural	Percent Difference Central City/Rural
Delaware	11.1	8.6	29.1%	9.5	16.8%
North Carolina	N/A	N/A	N/A	N/A	N/A
Washington	8.5	6.6	28.8	7.2	18.1
California	7.6	6.9	10.1	6.8	11.8
Michigan	11.0	8.5	29.4	11.2	- 1.8
New York[1]	6.2	7.3	-15.1	6.1	1.6

[1] Includes experience in school district only.

TABLE II-21

PERCENT ADVANCED DEGREES (1968-1969)

	Central City	Sub-urban	Percent Difference Central City/Suburb	Rural	Percent Difference Central City/Rural
Delaware	24.9%	28.0%	-11.1%	16.0%	55.6%
North Carolina	N/A	N/A	N/A	N/A	N/A
Washington	19.8	15.2	30.3	13.1	51.1
California	22.6	23.8	- 5.0	15.7	43.9
Michigan	36.0	32.6	10.4	18.8	91.5
New York[1]	19.4	13.6	42.6	5.4	259.3

[1] Masters + 30 or more credits, or doctorate. Inclusion of those with masters but less than 30 credits would undoubtedly make the percentages substantially higher.

However, between central cities and rural areas, the difference in education levels does have a significant impact on the expenditure differentials. The data show that the central cities have over 60 percent more teachers with advanced degrees than rural areas.

As a result of both the education and experience differentials between central cities and rural areas, one would expect rural districts to have lower per pupil expenditures even if a uniform statewide salary schedule were imposed.

Within the same school district, teachers with advanced degrees consistently have more years experience than those without advanced degrees.[71/] However, this relationship does not necessarily hold when comparing city and suburban school districts: the affluent suburban districts in Delaware, for example, have a higher share of teachers with advanced degrees than does the city of Wilmington, but these suburban teachers have less average experience.

It is not feasible to compare total average teacher experience among the states because the data are not compatible. [72/] It is possible, however, to compare advanced degrees between states, although their importance in determining salaries varies sharply even among school districts within the same state.[73/] Even in this area,

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[71/] See Table W - 2, Vol. II, which associates years of experience for teachers with various levels of education by type of district for the State of Washington.

[72/] For example, data for New York reflect only years of experience within a particular school district and not previous experience elsewhere in the state. In other states, out-of-state teacher experience may be counted only partially or may be totally ignored for salary increment purposes.

[73/] Some districts give salary increments for the mere accumulation of credits, without requiring the attainment of a degree.

data limitations presented some problems in making comparisons, particularly in North Carolina and New York.[74] Of the remaining states, Washington appears to have the fewest advanced degrees; Michigan the highest share. It should be emphasized that the level of post-graduate training, in terms of credit hours, is considerably above the percentage of teachers with advanced degrees. For example, over 60 percent of all teachers in the central cities of New York have more than 30 credits beyond a bachelor's degree but less than 20 percent have a masters degree plus 30 or more credits. Since salary schedules in many states are based on credit hours, or a combination of credit hours and degree, there is generally little incentive for acquiring advanced degrees rather than additional credits.[75]

B. Starting and Average Teacher Salaries

1. Starting Teacher Salaries [76]

To assess the impact of teachers' salaries on total expenditure differentials, the initial step is to determine differences in starting salaries (for a bachelor's degree with no experience). The impact of three additional factors -- education, experience, and salary increments based on education/experience -- is subsequently examined.

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[74] District level data are not available for North Carolina, while the New York education data reflect only masters degrees plus 30 credits, and thus underestimate the percentage of teachers with advanced degrees.

[75] In California, for example, less than 20 percent of the school districts provide additional payment for an M.A., usually a bonus in addition to what is paid for a certain credit level attainment.

[76] Since in some states data on starting teacher salaries were not available for every district, in those states the analysis is based on a selected sample of districts.

TABLE II-22

STARTING SALARIES WITH BACHELOR'S DEGREE (1968-1969)

	Central Cities	Suburbs	Percent Diff. Cities & Suburbs	Rural	Percent Diff. Cities & Rural
Delaware[1]	$6,400	$6,448	0.7%	$6,108	4.8%
North Carolina[1]	5,518	N/A	N/A	5,413	1.9
Washington	6,175	5,995	3.0	5,914	4.4
California	6,916	6,419	7.7	6,146	12.5
Michigan	7,500	6,930	8.2	6,393	17.3
New York	6,755	6,803	0.7	6,300	7.2
Weighted Mean	6,888	6,571	4.8[2]	6,119	10.0
Unweighted Mean	6,749	6,519	3.5[2]	6,046	8.2

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[1] Central Cities defined as those over 50,000 in population, compared to over 250,000 in the other states.

[2] In comparing cities to suburbs, North Carolina is excluded from mean values.

As shown in Table II-22, central cities have higher starting salaries than suburbs in three states (Washington, California, and Michigan) and lower salaries in two other states (Delaware and New York). Despite this uneven pattern, average central city salaries are 4.8 percent higher than those in suburban districts. If each state is weighted equally, the difference is decreased slightly to 3.5 percent. Where differences exist, they may be attributable to stronger union negotiating power in the cities.[77] Other causes may be that teaching in central cities is less attractive, or that wages are higher for other white-collar occupations in central cities than in suburbs. In contrast, starting salaries in rural districts are consistently lower than in either central cities or suburbs.[78] The average salary difference between central cities and rural areas is 10 percent.[79] These differences are no doubt attributable, at least in part, to cost of living differentials, prevailing wage rates for other white-collar occupations, and possibly to such factors as the strength of the respective parties in salary negotiations, and fiscal capacity with regard to the raising of local revenue.

2. Average Teacher Salaries

The level of average salaries [80] in a given school district is a function of three variables in addition to the base or starting salary: distribution of teachers by experience, distribution of teachers by education, and increments to base salaries as a result of the combination of experience and education for each teacher. There are, as shown in Table II-23, larger differences in average salaries among the states by type of district than there are in starting salaries. The average teacher salary for all sample districts is $9,885.[81]

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[77] In a number of districts, teacher organizations prefer to seek large increments for each additional year of experience rather than higher starting salaries.

[78] Rural teachers in Michigan have starting salaries which are 17 percent lower than in the central cities; in California, 13 percent lower than in the central cities.

[79] If each state is weighted equally, the difference is 8.2 percent.

[80] Since average teacher salaries in a number of states were derived by dividing teacher expenditures by the number of reported teachers, the computed salaries may be biased upward slightly from actual salaries by the inclusion of other related expenditures in the teacher salary account.

The weighted average salary for central cities in the seven states included in this aspect of the study, as shown in Table II-22, is $10,413, or five percent above the $9,876 average of suburban districts. In all states examined, central city average salaries exceed those of the suburban districts by a range of 2.3 to 15.7 percent.[82] The two factors contributing to higher average central city salaries are: (1) higher average years of experience for central city teachers in all states examined (with the exception of New York) and (2) higher starting salaries and salary increments in the central cities of three of the five states.

In smaller cities, weighted average teacher salaries are approximately $9,400, in rural areas only $8,134. Thus, rural salaries are 19 percent below the level (weighted averages) of central cities and 13 percent below the level of suburban districts.

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[81] If New York is excluded, the average teacher salary drops to $9,486.

[82] If each state is weighted equally, the average central city salary drops to $10,042, the suburban average to $9,374.

TABLE II-23

TEACHER AVERAGE SALARY 1968-69

	Central Cities	Suburbs	Percent Diff. Cities/Suburbs	Rural	Percent Diff. Cities/Rural
Delaware	$10,616	$9,179	15.7%	$7,828	35.6%
North Carolina	7,795	-	-	6,502	19.9
Washington	9,144	8,538	7.1	8,133	12.4
California	10,166	9,608	5.8	8,904	14.2
Michigan	10,702	10,544	2.3	8,706	23.9
New York	11,474	10,891	5.4	9,159	25.3
Colorado	8,071	7,482	7.9	6,879	17.3
Weighted Mean	10,413	9,876	5.4[1/]	8,501	22.5
Unweighted Mean	10,042	9,374	7.1[1/]	8,016	25.3

[1/] In comparing cities to suburbs, North Carolina is excluded from mean values.

The urban-rural salary differences are due primarily to three factors: (1) lower starting salaries for both bachelor's and advanced degrees in rural areas, (2) smaller increments for experience and education, and (3) a lower percentage of teachers with advanced degrees. The average experience level of teachers in rural areas does not appear to deviate from those employed in urban areas.

Average salaries are the highest in the large cities (over 250,000 population) of California, Michigan, and New York, as well as in Wilmington, Delaware. New York and California also have the highest average salaries in both suburban and rural districts of all states studied. Average teacher salaries in central cities show the highest positive correlation with the amount of local revenues raised, as would be expected.

Only limited data have been collected for salaries of instructional personnel other than teachers. These data show that the salary pattern by type of district parallels that of classroom teachers, with central cities paying the highest average salaries, rural districts the lowest.

III. DOLLAR EXPENDITURES AND RESOURCES PURCHASED: COMPARISON OF NEW YORK AND NORTH CAROLINA

It is well recognized that dollar expenditure comparisons among regions within a state, and even more, among states, may be misleading due to differences in the cost of purchasing similar educational resources in different areas of the nation. It is therefore useful to determine what share of expenditure differentials, particularly instructional expenditures, can be explained by cost of living or general wage rate differences (which would influence teacher salary differentials) among states and among types of districts. This point is demonstrated by looking at the states at the two extremes of per pupil expenditures among the six states included in this part of the study. New York and North Carolina are compared on the basis of the cost of specific functions (e.g., transportation, instructional personnel, administration). As shown in Table II-24, total current expenditures in New York are 117 percent above North Carolina; instructional personnel expenditures are 119 percent higher. The two greatest percentage differences are in the cost of transportation and of principals and supervisors.[83/] The greatest absolute dollar gaps, however, occur in expenditures for teachers and other instructional personnel.

Differences in teacher salaries among states (and generally, within a state) are attributable to a number of factors, including the following:

1. Differences in teacher organization strength and militancy
2. Cost of living differences
3. Higher proportion of teachers in rural areas (as found in North Carolina compared to New York)
4. Differences in education and experience levels of teachers
5. Relative supply and demand for teachers

To determine what effect price differences, as contrasted with qualitative differences (e.g., differences in pupil-teacher ratios, in education and in experience) have on per pupil expenditures for instructional personnel, the pupil-teacher ratios and educational levels for teachers in North Carolina were adjusted to reflect the ratios and education levels in New York. As the first step, pupil-

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[83/] In 1969-1970, senior high school principals with doctorates were paid between $26,495 and $28,995 in New York City. In most other urban areas in New York State, the range is from $16,300 to $24,500. In North Carolina, the range in urban areas for senior high school principals with doctorates is from $13,196 to $15,240.

TABLE II-2A

EXPENDITURE DIFFERENTIALS BY FUNCTION - NEW YORK AND NORTH CAROLINA

	New York		North Carolina		Percent Difference In Expenditures
	Per Pupil Expend.	Per-cent	Per Pupil Expend.	Per-Cent	N.Y. - N.C.
Instructional	$785	63.9%	$358	63.1%	119.3%
Principals & Superv.	80	6.5	25	4.4	220.0
Teachers	625	50.9	305	53.8	104.9
Other Instr. Personnel	21	1.7	8	1.4	162.5
Other Instr. Exp.	59	4.8	20	3.5	195.0
Non-Instructional	242	19.7	97	17.1	149.5
Administration	36	2.9	15	2.6	140.0
Transportation	54	4.8	13	2.3	315.4
Maintenance & Operation	108	8.8	42	7.4	157.1
Other Non-Instructional	44	3.6	27	4.8	63.0
Fixed Charges & Other Misc. Services	202	16.4	112	19.8	80.4
Total COE	$1,229	100.0%	$567	100.0%	116.8%

teacher ratios were adjusted from 23.2 pupils per teacher in North Carolina to the 17.7 pupils per teacher ratio in New York.[84/] Second, the percentage of advanced degrees in North Carolina was adjusted to reflect the distribution in New York.[85/] Of the total per pupil instructional cost differential, it was found that 30 percent could be explained by these two factors: pupil-teacher ratios and advanced degrees. The residual of 70 percent of the difference in expenditures is most likely attributable to salary differences between the two states.

It is also likely that differentials in other than instructional expenditure items, such as plant maintenance and clerical staff, are largely due to differences in labor costs among the two areas, since education is a highly labor intensive service. Only a few minor expenditures, such as textbooks and supplies, are relatively independent of local labor cost differentials.

Statewide average teacher salaries are 54.1 percent higher in New York State than in North Carolina. However, the differences in teacher salaries between the two largest cities of North Carolina and the two largest cities of New York are less than the statewide differentials.[86/] This indicates that wage differences for teachers are

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[84/] *It is assumed that the number of principals and other instructional staff, as well as their salaries, follows the teacher-pupil ratio; thus costs are increased proportionately.

[85/] It is not likely, based on data from other states, that average teacher experience varies between New York and North Carolina.

[86/] It should be noted that New York City accounts for 52 percent of the New York State sample district ADA, while all of Mecklenburg County (which includes the city of Charlotte) accounts for less than seven percent of the North Carolina sample district ADA.

more pronounced in smaller cities and rural areas, which constitute a substantially higher share of the pupil population in North Carolina than in New York. In addition, high expenditures in New York State are greatly influenced by high non-teacher salaries in New York City for such groups as school bus drivers, principals, and supervisors.

A comparison of the difference in wages for clerical and industrial workers between North Carolina and New York was undertaken to see whether these differences bore any similarity to those found in teacher salaries after the education and experience differentials between the two states were equalized. An examination of general union wages (based on U.S. Department of Labor data) in New York City and Charlotte, North Carolina for comparable occupations shows that wages are approximately one-third higher in New York City than in Charlotte.[87] Clerical salaries (generally non-union) are only about 18 percent higher in New York City than in Charlotte. A statewide comparison of wages in manufacturing industries (including both union and non-union labor) indicate earnings in New York State are 20 percent above the level of North Carolina. These data indicate that the differences between New York and North Carolina in union wages tend to be greater than non-union wages.

An intermediate budget for a family of four in Durham, North Carolina, in 1970, was $10,182, compared to $12,134 in New York City. This shows a difference in the cost of living between the two states of $1,952, or 19.2 percent, approximately the same difference as in manufacturing wages between the two states.[88]

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[87] The one exception is the trucking industry, where Teamsters' Union wages show little differences between the cities.

These preliminary findings indicate that the gap in teacher salaries exceeds the urban cost-of-living differential between the two states. The gap more closely reflects differences in union wage scales between the two states.[89]

The greatest percentage differences in expenditures between the two states are in areas such as plant maintenance, transportation, and administration. These expenditure disparities appear too great to be explained by wage differences alone. Thus other quantitative and qualitative factors which require exploration, but which go beyond the scope of this study, might include the possible dis-economies of scale in per pupil costs in very large cities, the increased maintenance costs in large cities due to vandalism, or the effect climate has on the cost of plant operation. Whether higher salaries for instructional staff in New York State attract higher quality personnel than are found in North Carolina or the relative supply-demand relationships for teachers in each of these states are also issues beyond the scope of this study.[90/]

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[88] The cost of living hypothesis can be misleading in Hawaii, which in 1968-1969 had the highest cost of living and lowest beginning teachers' salaries of any state examined in this study. When Hawaii is included in the analysis, no significant correlation between teacher salaries and cost of living differences in large cities is found.

[89] It should be emphasized that the issue of wage differentials was examined only briefly for this report. More detailed analysis would require, for example, a comparison of salaries of white-collar professional occupations, such as nurses and accountants, whose educational requirements are similar to those for teachers.

[90/] H. Levin, "Recruiting Teachers for Large-City Schools" (Washington: The Brookings Institution, 1968), mimeo, shows that teachers in southern states have lower salaries relative to comparable professions than teachers in other parts of the nation. Financial Status of the Public Schools, National Education Association (Washington, 1971), Table 13, provides a salary index for teachers. The index for teachers in the South Atlantic states (which include North Carolina), is 92 compared to a range of from 94 to 103 for other white-collar occupations. In the Middle Atlantic states (which include New York), the index for teachers is 112 compared to a range of from 98 to 103 for other white-collar occupations.

TABLE II-25

STATE EXPENDITURES BY FUNCTION
CENTRAL CITIES
(1968-1969)

	Delaware	North Carolina	Washington	California	Michigan	New York
Total Instructional	$616	$392	$614	$561	$554	$ 827
Principals & Supervisors	51	26	35	35	46	93
Teachers	495	342	446	427	435	669
Other Instructional Personnel	23	4	44	75	35	26
Other Instructional Expenditures	47	20	89	24	38	40
Total Non-Instructional	163	94	159	127	145	240
Administration	38	15	25	24	19	36
Transportation	7	1	10	7	9	59
Plant Operation	76	36	76	54	79	106 2/
Plant Maintenance	17	18	33	32	30	-
Other Non-Instructional	25	24	15	10	8	39
Total Instructional & Non-Instructional	779	486	773	688	699	1,067
Total Fixed Charges & Other Miscellaneous Services	13	77	50	62	50	211
Total COE	792	563	823	750	749	1,278
Less: Federal Revenues	91	43	54	56	91	71
Local and State COE	&701	$520	$769	$694	$658	$1,207

1/Includes clerical staff, supplies, textbooks, library
2/Includes both plant operation and maintenance
3/Includes health, food, attendance, social services
4/Excludes state payments for teacher benefits of $49 per ADA in Delaware, $35 in North Carolina, $65 in Michigan, $29 in Washington

TABLE II-26

STATE EXPENDITURES BY FUNCTION
SMALLER CITIES
(1968-1969)

	Delaware	North Carolina	Washington	California	Michigan	New York
Total Instructional	$470	$353	$542	$529	$607	$ 676
Principals & Supervisors	23	26	34	32	50	58
Teachers	381	302	404	402	475	527
Other Instructional Personnal	26	8	44	68	36	20
Other Instructional Expenditures 1/	40	17	60	27	46	71
Total Non-Instructional	148	83	147	121	156	215
Administration	29	16	20	19	24	35
Transportation	36	1	18	15	18	29
Plant Operation	61	25	70	57	80	103 2/
Plant Maintenance	8	15	24	22	27	-
Other Non-Instructional 3/	14	26	15	8	7	48
Total Instructional & Non-Instructional	618	436	689	650	763	891
Total Fixed Charges & Other Miscellaneous Services 4/	11	86	39	50	29	187
Total COE	629	522	728	700	792	1,078
Less: Federal Revenues	44	66	52	51	34	71
Local and State COE	$585	$456	$676	$649	$758	$1,007

1/ Includes clerical staff, supplies, textbooks, library
2/ Includes both plant operation and maintenance
3/ Includes health, food, attendance, social services
4/ Excludes state payments for teacher benefits of $49 per ADA in Delaware, $35 in North Carolina, $65 in Michigan, $29 in Washington

TABLE II-27

STATE EXPENDITURES BY FUNCTION
SUBURBS
(1968-1969)

	Delaware	North Carolina	Washington	California	Michigan	New York
Total Instructional	$518	N/A	$555	$532	$642	$ 779
Principals & Supervisors	27		34	35	49	70
Teachers	409		401	400	501	603
Other Instructional Personnel	32		43	69	41	13
Other Instructional Expenditures[1]	50		77	28	51	93
Total Non-Instructional	154		169	125	162	261
Administration	34		26	23	28	38
Transportation	23		31	12	13	45
Plant Operation	69		74	58	91	119[2]
Plant Maintenance	12		21	24	24	-
Other Non-Instructional[3]	16		17	8	6	59
Total Instructional & Non-Instructional	672		724	657	804	1,040
Total Fixed Charges & Other Miscellaneous Services[4]	4		41	52	32	205
Total COE	676		765	709	836	1,245
Less: Federal Revenues	13		21	25	20	29
Local and State COE	$663		$744	$684	$816	$1,216

[1] Includes clerical staff, supplies, textbooks, library
[2] Includes both plant operation and maintenance
[3] Includes health, food, attendance, social services
[4] Excludes state payments for teacher benefits of $49 per ADA in Delaware, $35 in North Carolina, $65 in Michigan, $29 in Washington

TABLE II 28

STATE EXPENDITURES BY FUNCTION
RURAL DISTRICTS
(1968-1969)

	Delaware	North Carolina	Washington	California	Michigan	New York
Total Instructional	$420	$333	$492	$506	$417	$ 634
Principals & Supervisors	19	25	33	28	25	47
Teachers	339	278	363	390	346	495
Other Instructional Personnel	19	14	35	56	20	8
Other Instructional Expenditures[1/]	43	16	61	32	26	84
Total Non-Instructional	164	110	150	133	130	239
Administration	28	18	21	22	24	34
Transportation	46	22	35	28	39	70
Plant Operation	65	22	61	55	51	94[2/]
Plant Maintenance	11	15	19	21	14	-
Other Non-Instructional[3/]	14	33	14	7	2	41
Total Instructional & Non-Instructional	584	443	642	639	547	873
Total Fixed Charges & Other Miscellaneous Services [4/]	4	94	30	48	20	160
Total COE	588	537	672	687	567	1,033
Less: Federal Revenues	49	96	48	67	37	18
Local and State COE	$539	$441	$624	$620	$530	$1,015

[1/] Includes clerical staff, supplies, textbooks, library

[2/] Includes both plant operation and maintenance

[3/] Includes health, food, attendance, social services

[4/] Excludes state payments for teacher benefits of $49 per ADA in Delaware, $35 in North Carolina, $65 in Michigan, $29 in Washington

SUMMARY

As stated in the introduction to this chapter, among the major objectives of this part of the study was the determination of the nature and extent of disparities in revenues and expenditures among a group of selected states, and among type of districts within and across these states. This chapter documented the extent of dollar differentials by revenue source and expenditure functions within and between states, and determined the major factors causing these differencials.

The study finds a common pattern in education finance characteristics within each type of district, particularly among central cities. Suburban districts -- although they have the widest variations in characteristics of any type of school district -- generally follow a common pattern when they are grouped together and compared collectively with central cities, smaller cities, and rural areas within and among states. Finally, the study finds sharp differences from state to state in the share of educational costs borne by different income groups, ranging from roughly proportional tax burdens to highly regressive. Total expenditures for education as a percent of household income also vary considerably among states examined.

The disparity analysis is an attempt to provide an overview of the existing structure of education finance and the causes for inequalities in both dollar expenditures and resources. Since the states examined were diverse in most characteristics, including regional location, it is likely that they are at least partially representative of most states in the nation. However, almost every state has certain unique educational finance characteristics which have developed over time as the result of a combination of economic, social, and political conditions. Thus even a larger sample of states would never fully represent the total nation.

An additional objective of the disparity analysis was to provide basic statistical data for examining alternative tax and distribution approaches as well as specific allocation formulas. Given certain goals to be accomplished by modifying the existing structure of education finance -- such as reducing expenditure differentials between districts -- the selection of a particular approach will be aided by this inquiry into the causes for existing disparities. In addition, this chapter's finding about existing expenditure patterns, fiscal capacity, tax burdens and characteristics of students, are necessary for a full understanding of the impact which alternative approaches to financing education utilizing various fiscal and education need criteria will have on school districts and their residents. These alternatives are discussed in the following chapter.

CHAPTER III

REVENUE AND DISTRIBUTION ALTERNATIVES

INTRODUCTION

In Chapter II, it was shown that the major factor contributing to disparities in revenues was the distribution of local funds, raised primarily through the local property tax. If the lessening of the disparities in school district expenditures is an objective, then alternative sources of revenue must be examined, as well as how specific school districts will be affected by the distribution of additional revenues. In this chapter, potential new state and local revenue sources are analyzed for six states.[1/] The impact which certain alternative formulas for allocating state aid might have on existing levels of revenues and on existing tax rates by type of school district in these six states is also examined, as is the potential contribution of each formula toward lessening disparities among school districts.

In examining alternative revenue sources and distribution formulas in the six states, a series of non-stochastic models are utilized, under fixed behavioral assumptions, to measure various impacts on different categories of districts. Precise forecasting naturally requires an accurate predictive model of the school districts' behavioral responses to institutional changes, because the districts will modify their policies and decisions when faced with a change in the levels of state revenues under a new

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[1/] Delaware, North Carolina, Washington, California, Michigan, and New York.

distribution formula or with the changes in the tax structure implicit in new revenue sources. The magnitude of such local adjustments could be limited initially by the imposition of restraints on local behavior.[2]

Despite the obvious desirability of such a predictive model, implementing one for a study of this nature is impossible for several reasons. To examine different states -- from disparate regions of the country and with different financing mechanisms -- one requires not a single model but multiple models which will reflect the differences in tastes both among and within states. Even if districts could be grouped homogeneously, the problem of obtaining appropriate data for school district units (which are not generally contiguous with any other political subdivision) is insurmountable. Finally, the reliability of any prediction model declines as the magnitude of the change introduced increases. The scope of the changes analyzed in this report is vast, involving in some cases a shift from 30 to over 90 percent in the level of state funding.

However, the policy maker can gain valuable information about alternative revenue sources and distribution formulas through the type of nonstochastic analysis undertaken in this study. The analysis will give him insight into the initial impact of a particular program in terms of costs, of shifts in funds and tax rates among types of districts, and of the existing disparities in per pupil expenditures -- that is whether the disparities are lessened or increased by the imposition of a particular alternative. For a program dependent largely upon local decisions, such as a formula under which state grants are required to be matched by local funds, the policy maker can control the program by linking it to some average past behavior. This would diminish the effect of new behavioral changes and would assure the state that it was not overcommitting itself in terms of funds for the new program.

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[2] An example of the kinds of restrictions that might be imposed occurs with federal ESEA Title I, which requires that compensatory funds be used as a supplement to existing programs and not as a substitute for them. However, such a restriction, even if rigorously enforced, can only insure no shift of behavior in the short run, for future decisions about the expenditure levels will be influenced by the presence of Title I aid.

It is beyond the scope of this research to determine the "best" financing program for a particular state or states. That would require information concerning the value society puts on various educational goals and on "equality of opportunity," an understanding of the input-output relationships in education, the market structures from which the needed resources can be drawn, and on society's view of what constitutes an equitable tax structure. Thus, the evaluation of any alternative presented in this chapter is limited. Given the policy maker's own views of an optimal distribution of resources or tax burdens, this analysis will provide him with insight into which alternatives approach that optimum.

Since an objective is to lessen the disparities in per pupil educational expenditures among school districts, one needs a standard against which to measure the effectiveness of various formulas in achieving the desired equalization.3/ To evaluate the alternatives analyzed in this report, a statistical measure, the Gini Index of Concentration, was adapted for this purpose.4/ Once the correct cost ratios of educating different

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3/ Equalization, as noted in Chapter I, can mean many things -- equal dollars per pupil, equal real resources or educational services per pupil, or more than equal resources for those with greater education need.

4/ See Herman P. Miller, U.S. Bureau of the Census, Income Distribution in the United States, Washington, D.C., U.S. Government Printing Office, 1966 pp. 220-221, for a description of the Gini Index of Concentration.

categories of students are known with some certainty, this statistical measure can determine how closely a particular distribution formula can equalize according to various criteria.[5/]

The distribution of the tax burden for education which results from the various alternatives examined in this study is of equal importance to the issue of the allocation of educational resources to school districts. However, without a behavioral model, one cannot determine the changes in the local property tax rates and hence the changes in the local tax burdens of various income classes. With regard to new state taxes required for the various alternatives, an even more thorough knowledge of the political process would not help to accurately predict what shifts in rates or types of taxes would take place. Thus, the analysis presented in this chapter

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[5/] The Gini Index, though a precise measure on the theoretical level, presents certain difficulties in practical application. First, the cost ratios by which students are weighted require the type of information mentioned earlier in discussing a "best" alternative. As this information involves both value judgments and a more thorough understanding of the educational process than is currently available, the use of a single correct set of ratios is impossible. This problem can be overcome partially by using various sets of reasonable ratios to test the sensitivity of a particular alternative. An alternative which performs well against many reasonable standards would then be preferable to one whose performance is erratic. In the latter case, the adoption of that alternative would increase the probability of a maldistribution of resources since one of the sets of ratios under which it performs poorly may be the correct set.

A second difficulty stems from the fact that in most states it is virtually impossible to obtain a detailed breakdown of various categories of students by district. Thus, the calculation of Gini Indices in this study suffered from the lack of sufficient and consistent information. Accordingly, the results are not reported in the discussions of the various alternatives. The Gini Indices are, of course, available to any interested researcher upon request.

The authors of this report regard the Gini Index as a valuable tool in evaluating alternative distributions of educational resources. Any state contemplating a change in its system of educational support is encouraged to expend the necessary resources for a valid application of the Gini Index Test.

of the impact of the various alternatives examined in this study on the tax burdens of various income groups is limited. Although no attempt is made to relate the distribution alternatives analyzed in this report to the changes in the state tax structure required to finance them, the magnitude of the shifts involved in some of these alternatives indicates that significant restructuring of the state and local tax system would have to take place.

The remainder of this chapter is divided into two major parts. Part I concentrates on new revenue sources at both state and local levels. The analysis emphasizes the redistribution of revenues and the shifts in tax rates among types of districts when revenues raised through alternative sources are substituted for those now raised through the property tax. Part II, concerned with alternative distribution formulas, discusses the partial state funding of education through general purpose aid programs; the partial state funding through special purpose aid programs -- primarily categorical aid programs designed to remedy particular educational problems; and full state funding.

PART I

ALTERNATIVE TAX MEASURES

I. INTRODUCTION

Much of the movement for reform in education finance is centered on altering the dominant role of the local property tax. Proposals to reduce reliance on the local property tax involve both new state and local taxes for education. The proposed state taxes, if designed to completely supplant the property tax, would, in effect, result in full state funding. Although the issue of changes in the tax burden for various income groups can be accommodated (see Chapter II for an analysis of the burden of existing state taxes), the impact on educational expenditures is less clear. The impact will depend upon the linkage between any alternative state tax and the formula by which its revenues are distributed.

Not all proposals for education finance reform concern state taxes, however. Local non-property taxes are being proposed as one answer to pressures developing against higher property taxes and to criticisms of the property tax as a regressive instrument for financing schools. New tax sources can permit districts to provide more extensive programs with smaller local property tax increases, or possibly even with reductions in the property tax. The new local taxes considered in this section also fulfill the second objective of achieving greater progression in the tax burdens among income groups within a district.[6/] However, their effect on the relative tax burdens of individuals with similar incomes in different districts is unclear. Local taxes generally contain no transfer mechanism aimed at eliminating tax burden differences among districts. Whether these differences are diminished or increased will depend upon the distribution of the new tax bases among districts and the proportions in which revenues are derived from the property tax or any of the new taxes.

II. STATE TAX ALTERNATIVES

A. Description

As noted in the introduction to this section, a state tax designed to eliminate the local property tax is in fact a move toward full state funding. Distribution alternatives for full state funding are discussed in Part II of the chapter. An analysis of these alternatives indicates that large increases in state revenues are necessary if certain objectives (such as reducing disparities without lowering the average expenditure level) are to be met. Thus the state taxes chosen to meet these new obligations must be large revenue producers. For this reason, analysis of alternative taxes is focused on the three largest tax bases most commonly used: retail sales, income, and property. The first, and increasingly the second, are traditional areas of taxation for most states. Thus the appropriate form of the tax appears to be a surcharge placed upon the existing tax. Such a surcharge would be set at the level required to raise sufficient

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[6/] Not all local taxes are necessarily less regressive than the property tax. For example, a capitation tax is more regressive. However, the alternatives considered here, income and sales taxes, are found to be generally less regressive than taxes on residential property.

revenues to equal current property tax collections for education. The use of a surcharge implies that in the case of the income tax the relative rate structure and income definitions would remain constant and the types of items exempted from the sales tax would not change.

The last base, real and personal property, has been reserved primarily for local financing, although most states tax specific categories of property, such as utilities and railroads. But the increased state revenue requirements may force the state to make use of the property base to prevent the rates of other taxes from rising too sharply in relation to neighboring states. For purposes of analysis, a uniform rate was set which would provide a revenue yield equal to current property tax collections. In addition, a distribution scheme was calculated which provides for a flat per pupil grant from these revenues while maintaining the existing distribution formulas for other state revenues.

A variant of the statewide property tax, which provides more local fiscal autonomy than that described above, is a tax at a uniform statewide rate on the commercial-industrial portion of the tax base, letting local districts continue to tax residential and other property. This alternative aims at reducing disparities in wealth between districts because of the fortuitous location of commercial-industrial property. This may counter the advantage that some high commercial-industrial wealth districts have in being able to shift a large portion of the property tax out of the district. An additional effect is to make the remaining property wealth of the district, primarily residential property, a more accurate reflection of the income position of the district's residents.

B. Results of Analysis

State Income Tax. To obtain the level of revenue now collected from property taxes for education, an income tax surcharge limited to the personal income tax would range from a high of 192 percent in California to a low of 28 percent in Delaware (as seen in Table III-1.)[7] But restricting the surcharge to the personal income tax would be a windfall to the owners of commercial and industrial property since they could capitalize the property tax savings without immediately increasing their state income tax liability. Therefore, it is preferable to consider a surcharge applied to both the personal income taxes and the business taxes.[8] If this were done, the range of surcharge rates would be considerably reduced -- from a high of 125 percent in California to a low of 19 percent in Delaware. The impact of these surcharges is seen most clearly by examining them in relation to the existing state income tax. Table III-2 shows the effective rates of the personal income tax for each income group in the states at the two extremes (Delaware and California), after the surcharges applicable to personal income and business taxes have been added.

The State of Washington does not currently have an income tax. To determine a reasonable income tax rate for education, the assumption was made that the state would adopt a personal income tax identical in its provisions to the federal personal income tax except for the

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[7] The substantial difference between these two states is due to two factors. First, Delaware, being a high aid state, is already using state revenues to finance the bulk of education expenditures. Accordingly, local property tax collections are small relative to state tax collections. California, a moderate aid state, has a high aggregate level of property tax collections. Secondly, the extent of the use of the income tax differs significantly in the two states, thus increasing the gap still further. Delaware relies more heavily on an income tax with a highly progressive rate structure for state revenues.

[8] Business taxes include both corporate income and franchise taxes.

TABLE III-1

STATE TAX ALTERNATIVES
INCOME TAX SURCHARGE

	PERSONAL INCOME TAX AS PERCENT OF PERSONAL INCOME AND BUSINESS TAXES	CORPORATE INCOME TAX AS PERCENT OF PERSONAL INCOME AND BUSINESS TAXES 1/	FRANCHISE TAX PERCENT OF PERSONAL INCOME AND BUSINESS TAXES	PERSONAL INCOME TAX SURCHARGE REQUIRED TO ELIMINATE PROPERTY TAX	PERSONAL INCOME AND BUSINESS TAX SURCHARGE REQUIRED TO ELIMINATE PROPERTY TAX
DELAWARE	67.0%	15.2%	17.8%	22%	14%
NORTH CAROLINA	58.3%	26.9%	14.8%	66%	39%
CALIFORNIA	65.0%	35.0%	N/A	192%	125%
MICHIGAN	54.5%	29.6%	15.9%	175%	95%
NEW YORK	71.5%	28.5%	N/A	89%	64%

N.A. means data not available to separate franchise tax collections from corporate income tax collections.

1/ Business taxes include those taxes imposed upon corporate net income and the franchise taxes imposed upon corporations chartered in the state.

TABLE III-2

INCOME TAX SURCHARGE
EFFECTIVE RATE FOR EDUCATION

FOR URBAN AREAS

	Under $2,000	$2,000-2,999	$3,000-3,999	$4,000-4,999	$5,000-5,999	$6,000-7,499	$7,500-9,999	$10,000-14,999	$15,000 and over
I. DELAWARE									
A. Current	0.20%	0.9%	1.4%	1.9%	2.3%	3.0%	3.6%	4.3%	5.5%
B. With Sur-Charge Added	0.23	1.1	1.6	2.2	2.6	3.5	4.2	4.9	6.3
II. CALIFORNIA									
A. Current	0.00	0.03	0.03	0.2	0.1	0.2	0.4	1.0	3.3
B. With Sur-Charge Added	0.00	0.06	0.06	0.42	0.2	0.5	0.9	2.2	7.4

rate structure. To produce revenues equal to those currently raised through the local property tax for schools, the rate structure would be 13 percent of the federal tax.[9] This rate would be reduced if corporate income were included in the base, but the extent of the reduction cannot be determined since the federal corporate income tax information for the State of Washington is not an accurate estimate of the amount of corporate income that would be taxable in that state. Table III-3 shows what the effective tax rates would be if the nominal rate structure is set at 13 percent of the federal rate for a joint return and contrasts these rates with the effective rates for personal income taxes now in effect in the states with the highest and the lowest income tax rates of the states studied, New York and Michigan, respectively.

State Sales Tax. The other major state tax broadly used at present is the sales tax. Table III-4 indicates that the rate increase needed to replace the revenues currently raised by the local property tax for schools would be substantial. For New York, the rate is particularly high. In 1968-69 there were local sales tax add-ons to the 2 percent state sales tax (changed to 3 percent in early 1969) as high as 3 percent. This means that in some cities, there would have to be a sales tax as high as 10.5 percent.

State Property Tax. The third state tax considered in this study is a property tax levied at a uniform rate throughout the state. Such a tax would result in a disproportionate share of the revenues coming from the central cities, when compared with their share of total enrollment (as

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[9] For example, if the federal tax liability for a household is $2,000, the state income tax for education would be $260.

TABLE III-3

INCOME TAX FOR EDUCATION

WASHINGTON

Effective Rates

Adjusted Gross Income Class	Hypothetical Washington Personal Income Tax	Current New York[1] Personal Income Tax	Current Michigan Personal Income Tax
Under $2,000	.3%	1.3%	.1%
$ 2,000 - $ 2,999	.9	1.2	.1
$ 3,000 - $ 3,999	.9	1.6	.2
$ 4,000 - $ 4,999	1.2	1.8	.2
$ 5,000 - $ 5,999	1.3	2.8	.2
$ 6,000 - $ 7,999	1.4	2.5[2]	.3[2]
$ 8,000 - $ 9,999	1.4	2.9[3]	.7[3]
$10,000 - $14,999	1.7	3.9	1.3
$15,000 and over	2.6	6.5	1.8

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[1] These rates are for the urban areas of both Michigan and New York

[2] The income class is $6,000-$7,499.

[3] The income class is $7,500-$9,999.

TABLE III-4

STATE SALES TAX AS AN ALTERNATIVE TO PROPERTY TAX FOR EDUCATION

	Current Sales Tax Rate (1968-1969)	Additional Sales Tax Required	Total Sales Tax
Delaware[1]	-	2.0%	2.0%
North Carolina	3.0%	2.0	5.0
Washington	4.5	2.0	6.5
California	4.0	5.0	9.0
Michigan	4.0	4.0	8.0
New York	2.0	5.5	7.5

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[1] Delaware does not have a sales tax. The required rate was derived from retail sales information, excluding purchases of food and drugs, estimated by Sales Management.

illustrated in Table III-5). Michigan is an exception in that Detroit's share of the revenues would be only .2 percent greater than its share of the pupils. It is impossible to compute the net transfers which would occur under the full state funding distribution mechanisms analyzed in Part II of this chapter, since these revenues from the property tax would be lumped with other state revenues.

Another approach would be to maintain the existing state distribution programs and distribute the new state property tax revenue as a flat per pupil grant. In this case, the central cities, with their higher property wealth, would be subsidizing other types of districts. The proportion of funds distributed to the various types of districts under the flat grant per pupil approach would correspond exactly to the distribution of pupils as shown in Table III-5. The net amount of transfers for Michigan and New York is shown in Table III-6. Since the tax rate and the size of the grant are set at the levels required to equal current property tax collections for all districts in the state and not just for the sample districts, the net transfer for the total sample is not necessarily zero. In the case of Michigan and New York, the transfer is negative, reflecting the greater wealth per pupil in the sample districts compared with the remaining districts of the state. This result is not surprising since, as discussed in Chapter II, the sample districts are weighted heavily toward the larger districts.

In both Michigan and New York, the largest gainers under this alternative are the rural districts. The smaller cities in Michigan and the central cities in New York have the biggest outflows. In addition to the question of the transfers of revenues, the shift in tax rates which occurs among districts in moving to a statewide levy is a significant issue.

TABLE III-5

DISTRIBUTION OF PUPILS AND STATE PROPERTY TAX REVENUES BY TYPE OF DISTRICT

	DELAWARE		WASHINGTON		CALIFORNIA		MICHIGAN		NEW YORK	
	PUPILS	TAX REVENUE	PUPILS	TAX REVENUE	PUPILS	TAX REVENUE	PUPILS	TAX REVENUE	PUPILS	TAX REVENUE
CENTRAL CITIES	12.3%	15.8%	25.2%	35.5%	46.0%	52.3%	28.3%	28.5%	58.8%	70.1%
SUBURBAN AREAS	41.3	41.5	31.6	27.9	33.3	29.8	26.0	25.9	22.4	17.7
OTHER CITIES	16.9	14.4	21.5	20.5	15.2	13.2	33.7	35.9	11.0	7.7
RURAL AREAS	29.4	28.3	21.7	16.2	5.5	4.7	12.1	9.8	7.8	4.5
TOTAL SAMPLE	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

TABLE III-6

NET TRANSFERS PER PUPIL ON STATEWIDE PROPERTY TAX REVENUES FLAT PER PUPIL GRANT DISTRIBUTION

	MICHIGAN	NEW YORK
Central Cities	$-38.67	$-153.29
Suburban Areas	-35.09	108.23
Smaller Cities	-61.91	169.42
Rural Areas	38.90	249.95
TOTAL SAMPLE	-36.20	-27.65

Table III-7 shows that some of the advantage that the rural districts in Michigan have in terms of new revenues may be offset by the fact that their tax rate increases from 8.6 to 11.8 mills. On the other hand, the revenue advantage of New York's rural districts is reinforced by a drop in tax rates, although the reduction from an average of 18 mills to 17.6 mills cannot be regarded as significant.

State Commercial-Industrial Property Tax. To permit some local flexibility in raising revenues, one alternative would be to let local school districts continue to tax residential property but, because of the extremely wide variations in commercial and industrial property among districts, to tax this latter property base through a state tax.[10] Data on the proportions of the various types of property within a school district do not generally exist. These data are available only on an assessing unit basis, which is generally much larger than a school district. However, in North Carolina, where school districts for the most part are county units, information is available at the county level for selected counties. An analysis of these data indicates that distributing state-collected taxes on commercial and industrial properties on a flat per pupil basis would shift revenues from urban to rural areas. In North Carolina (and probably other states), this would result in reducing per pupil expenditure disparities, since there would be redistribution from the more affluent to the less affluent counties. More drastic shifts than those found in North Carolina, where school districts comprise all or at least the major share of a county,

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[10] To overcome inequalities that still may result from disparities in residential wealth among districts, it has been suggested that the property bases be "power equalized." This concept is discussed in Part II.

TABLE III-7

PROPERTY TAX
EXISTING LOCAL RATES AND STATEWIDE RATE*

	MICHIGAN	NEW YORK
Central Cities	$1.04	$1.48
Suburban Areas	1.31	2.08
Smaller Cities	1.21	1.67
Rural Areas	0.86	1.80
TOTAL SAMPLE	1.15	1.62
STATEWIDE RATE	$1.18	$1.76

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*Tax rates are expressed as dollars per hundred dollars of full value of property.

would occur in such states as California, which have small "industrial enclaves" or in industrial cities such as Dearborn, Michigan.

The preceding analyses of alternative state taxes have been made under the assumption that a single tax would be used to replace the local property tax. Realistically, a combination of taxes would more likely be employed, but which combination would be most acceptable politically is not known. These analyses are useful, nevertheless, as the values provided indicate the upper limits of the rate increases required when a single alternative tax is utilized.[11/]

III. LOCAL TAX ALTERNATIVES

A. Description

In an attempt to reduce tax burdens on the low income segments of a community, it has been proposed that school districts be allowed to levy taxes other than the property tax. The two principal taxes suggested are a local income tax and a sales tax. These taxes have already been instituted in a number of states at the local level to raise revenues for local services -- but the revenues are generally restricted to non-school uses. For ease of administration and to insure greater compliance, the local taxes have normally been in the form of a surcharge or piggyback tax to be collected by the state and returned to the local unit.[12/]

[11/] It should be borne in mind that these analyses were undertaken without reference to existing state constitutional and legal limitations which might limit the state's flexibility in providing additional or alternative revenues for education. Elsewhere in this report, examples of such limitations have been noted. For instance, in Michigan, the state income tax, first enacted in 1967 as a flat rate tax, cannot be a graduated tax under the state constitution. Sales taxes may not exceed four percent. (Art. IX, Secs. 7 and 10, Michigan State Constitution). These and similar restructions must be taken into account in developing alternative state taxes as substitutes for the local property tax.

[12/] As examples, one can cite the county income tax surtax in Maryland, and the local sales tax in Washington.

One consideration in moving at the school district level from almost complete reliance on the property tax to other local taxes should be the stability of tax revenues under changing economic conditions. The property tax base tends to be quite stable throughout the business cycle. Retail sales and income fluctuate significantly with economic changes on the national or state level and the shifts are likely to be even more pronounced at the local district level. The small size of most school districts makes them susceptible to large changes in these tax bases due to micro-level local changes. For example, the opening of a new shopping center just across the district boundary, or the relocation of a single industrial plant can significantly influence the amount of retail sales or personal income within the district. The problem of an unstable tax base can be overcome to a certain extent by raising and lowering the tax rates with these fluctuations. However, with a sales tax, the frequent adjustment of rates would greatly increase the costs of compliance. Moreover, raising rates when the base has dropped due to economic setback could be politically unacceptable.

The impact of any new local tax on individual school districts is difficult to estimate. The problems involved are twofold. One is to determine to what extent a district might want to use alternative taxes not simply for new revenues but to provide property tax relief. This issue can be avoided to a certain extent by the assumption that the state will place severe limits on the permissible range of rates. A state imposed maximum exists now in many states for local sales and income taxes. No state allows local units the same latitude in setting income or sales tax rates as they have in determining the property tax rate.[13]

The other difficulty in assessing the effects of these taxes is the lack of available data. The fact that these taxes have not been used for school district purposes in the past means that little information exists about the size of income or sales tax base in particular school districts, except when districts are coterminous with other political jurisdictions. Because of this limitation, local sales and income tax surcharges on the existing state taxes have been calculated only for North Carolina. Here, information on the tax bases is available since the majority of districts in North Carolina are coterminous with county boundaries. For counties with more than one school district, it is assumed that the tax revenues would be distributed among the districts within the county on a per pupil basis.

In the State of Washington, which has neither a personal nor a corporate income tax, a hypothetical local personal income tax has been calculated at the district level. This tax is based upon the estimates made of federal personal income tax collections by district from the zip code analysis (discussed in Chapter II).[14]

The imposition of a personal income tax to provide property tax relief should be accompanied by taxation of corporate income to reduce the inequity arising from the windfall capital gain that owners of property would receive. This would insure that all of the property taxes paid by commercial and industrial property owners are not shifted to individual residents of the district. A corporate income tax would have to be administered at the state level to keep the compliance costs reasonable. The distribution of the tax revenues among districts would then be an additional factor in determining the shifts in tax burdens among the district's residents.

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[13] While legislatures frequently impose statutory maxima on property tax rates, in most cases these maxima can be overriden by a majority of the voters. Some states, such as Michigan, have an absolute ceiling, but set at such a high rate (50 mills) that it is unlikely to present a real barrier. On the other hand, the big six cities in New York are already taxing at the maximum set by that state's legislature.

[14] Since the federal tax information is for payments made in 1967 and the property tax is for 1968-69, the federal collections were inflated by 47 percent, which was the increase in federal collections from the State of Washington between 1967 and 1969.

Another factor affecting relative tax burdens would be the disposition of the tax relief between renters and owners of property. Unless a significant portion of the tax savings would be passed on to renters in the form of lower rents, renters would be at a disadvantage compared to home owners. They would have to pay additional sales or income taxes without any adjustments in their income or property wealth.

B. Results of Analysis

Local Sales Tax. The calculations for the sales tax were based on two assumptions: a single state rate for all districts, and allowing the district to set its own rate at any level. The single state rate was set for North Carolina as an additional 1 percent on top of the current 3 percent sales tax. Table III-8 shows the average reductions in tax rates that would be possible if all the local sales tax revenues were used to replace revenues now raised through the local property tax for the support of public education. In absolute dollars of revenue (Table III-9), the largest counties would gain the most.[15] However, revenues would not be

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[15] The four counties in this category contain 26 percent of the state's students but collect 38 percent of the state sales tax.

TABLE III-8

LOCAL 1% SALES TAX AS REPLACEMENT FOR LOCAL PROPERTY TAX FOR SCHOOLS

NORTH CAROLINA
(1968 - 1969)

	Reduction in Property Tax Rate (per $100 of full value)	Percentage Reduction of Current Property Tax Rate
Counties with population over 100,000		
1. One Administrative Unit	$0.34	80.2%
2. Several Administrative Units	0.31	98.4
Counties with population between 10,000 and 100,000		
1. One Administrative Unit	0.27	111.0
2. Several Administrative Units	0.24	106.8
Counties with population less than 10,000		
1. One Administrative Unit	0.18	91.0
2. Several Administrative Units	0.22	99.7
TOTAL SAMPLE	$0.27	101.0%

TABLE III-9

STATE INCOME AND SALES TAXES AS REPLACEMENT FOR LOCAL PROPERTY TAX FOR SCHOOLS

NORTH CAROLINA
(1968 - 1969)

	Local Sales Tax Revenues Per Pupil[1]	Local Income Tax Revenues Per Pupil[2]
Counties with population over 100,000		
1. One Administrative Unit	$122	$81
2. Several Administrative Units	115	74
Counties with population between 10,000 and 100,000		
1. One Administrative Unit	80	53
2. Several Administrative Units	61	43
Counties with population less than 10,000		
1. One Administrative Unit	43	27
2. Several Administrative Units	48	35
TOTAL SAMPLE	$78	$52

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[1] Represents an additional 1% sales tax at the local level.

[2] Represents a 25% surcharge on the existing state personal income tax.

sufficient at a percent rate to completely eliminate the property tax for school purposes in all districts if the same expenditure level is to be maintained. The medium and small sized counties receive much less revenue per pupil. But with their smaller present local contributions, the medium sized counties would actually receive more revenues than they are currently raising from the property tax.

Under the second assumption -- allowing counties to set the sales tax rate at their option -- the rates required to eliminate the property tax would be very close to 1 percent. The only exception to the 1 percent rate would be the two largest counties, Mecklenburg and Forsyth. In these cases, the local rate of 1.25 percent would yield revenues approximately equal to current property tax collections.

Local Income Tax. A local income tax surcharge of 25 percent was calculated for North Carolina and the results, in revenues per pupil, are shown in Table III-9. Although the revenue raised is less in amount than that raised through the sales tax alternative, the relationship among types of districts is similar. Table III-10 shows the surcharge rates necessary to eliminate the property tax. While the administrative cost, and the costs of obtaining compliance in allowing districts to set their own sales tax rates, may be prohibitive, they may be tolerable under an income tax. Thus, the range here may offer a guide to the surcharge levels that would be employed.[16/]

A hypothetical personal income tax at the district level has been

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[16/] It should be noted that the use of North Carolina to illustrate these local tax alternatives underestimates the sales or income taxes that might be needed in other localities because of the generally low reliance on the property tax for schools in North Carolina compared with other states.

TABLE III-10

LOCAL INCOME TAX SURCHARGE RATE REQUIRED TO ELIMINATE THE PROPERTY TAX

Counties with Population Over 100,000	
1. One Administrative Unit	48.0%
2. Several Administrative Units	45.1%
Counties with Population Between 10,000 and 100,000	
1. One Administrative Unit	42.2%
2. Several Administrative Units	38.7%
Counties with Population Less than 10,000	
1. One Administrative Unit	45.0%
2. Several Administrative Units	33.0%
TOTAL SAMPLE	42.5%

calculated for the State of Washington which currently has no income tax, state or local. The average rates required to raise sufficient revenues to replace those now raised through the use of the local property tax are very similar for each type of district. However, there is considerable variation within the district types. For example, the suburban district of University Place would have to impose a surcharge of only 9 percent to yield $145 per pupil, its current property tax collection. Another of the suburban districts, Kent, would have to impose a 30 percent surcharge, for a yield equal to its current property tax collections of $315 per pupil. Substantial differences in revenue generating capacity from the same tax rates also exist; the Bellevue school district could raise $329 per pupil with a surcharge of 19 percent while Bethel could only raise $111 per pupil at the same tax rate.

The local tax alternatives considered above could provide some relief to low income groups excessively burdened by the property tax. However, as long as the local taxes are levied on a district basis, they will provide little reduction in the revenue generating differences that exist among districts.[17/] This is due to the strong correlation which exists among the three largest tax bases: retail sales, personal income, and residential property.[18/]

[17/] In addition, a greater proportion of these taxes will be paid by the district residents since they are not likely to be shifted outside the district to any great extent as is the property tax on commercial and industrial property.

[18/] This means that without a concomitant change in the state distribution formula, the level of education spending in a district would be largely dependent upon its local wealth. If the principle articulated by the California State Supreme Court in Serrano v. Priest and by the three-judge federal court in Texas in Rodriguez v. San Antonio Independent School District is upheld, this method of financing education may no longer be constitutional.

PART II

ALTERNATIVE DISTRIBUTION FORMULAS

I. PARTIAL STATE FUNDING: GENERAL PURPOSE AID

A. Introduction

State aid for general purpose educational expenditures has had two traditional goals. The first is to insure that "minimum adequate" educational programs are provided to all children within the state. Thus the state guarantees that even a child in the poorest distribute will have at the minimum educational program the state deems essential for an educated citizenry.

The second goal is to reduce some of the inequalities in fiscal capacity which exist among school districts. The existence of local governments allows small groups of citizens to opt for the mix and levels of services they desire. However, the concentrations of property wealth in a few districts, particularly industrial, limits the range of choice available to other districts without prohibitive sacrifice.

With these goals in mind, most states have chosen some form of state-local partnership in the financing of education. The most common program of state aid is the Foundation Plan or Fixed Unit Equalizing Grant as developed by Professors Strayer and Haig.[19] In theory this formula establishes a statewide uniform minimum level of educational expenditures per pupil. A minimum property tax rate is required of all districts. The difference between the district's property tax collections under this mandated rate and the level of expenditures determined by the state for the minimum program level is then paid by the state from general revenues.[20] Districts are then allowed to supplement these funds through additional property taxes as desired.

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[19] See Charles S. Benson, The Economics of Public Education, Boston: Houghton Mifflin Co., 1968, p. 146.

Foundation plans, however, have deviated from what they were in theory. First, as per pupil costs continue to rise, the minimum "adequate" program has become a smaller fraction of total current expenditures in most districts. Second, wealthy districts have been guaranteed some state aid (as flat grants) even though the required tax rate raised far more than the foundation program level. The purpose of the foundation plan, to achieve a significant degree of equalization, has thus been diminished.

The other major equalizing program that has been used in some states is the percentage equalizing grant, first proposed by Professors Updegraff and King.[21] Under this plan the state guarantees that at the same tax rate, every district will have revenues equal to those available to a district with wealth equal to the statewide average. The decision regarding the level of expenditures is left to the local districts through their choice of tax rate. In theory this formula only assists districts which have below average property wealth to raise them to the average. It provides no reduction in the considerable disparities which can exist among districts of above average property wealth. One proposal which attempts to address this latter aspect is the "power equalizing" formula, which provides for negative transfers from districts of high wealth.[22/] That is, the wealthy districts would be permitted to keep only a set amount of the revenues they raised through a particular tax rate, and would return the excess amount to the state. In effect, this formula equalizes on the basis of tax effort rather than tax base.

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[20] The problem of a district raising more in local property taxes than its expenditure requirement is avoided in theory by setting the foundation tax rate so the wealthiest district will receive no transfer from the state.

[21] See Charles Benson, op.cit. at p. 162.

The next portion of this chapter suggests some alternative approaches to financing education which would enable the state to fulfill the two goals outlined -- to provide a minimum adequate program for every child and to lessen disparities among districts -- without abandoning the existing framework of a state-local partnership in financing. State programs which would match local revenues in inverse proportion to the district's wealth, as determined by a number of fiscal measures in addition to the property base, are analyzed as are some aspects of "power equalization." The impact on central city, suburban, smaller city and rural school districts of each of these alternatives, in terms of expenditure levels and shifts in tax rates, are shown and compared with the existing system in selected states.

B. Matching Grants Based on Fiscal Capacity

1. Description of Formulas

One device for equalizing expenditures among districts while simultaneously narrowing the differences in local tax burdens is an aid program

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[22/] The "power equalizing" formulas, as proposed and named by Professor Coons, et al. in Private Wealth and Public Education, Harvard University Press, 1970, encompass the percentage equalizing grant as one special case. Analysis of the "power equalizing" type formulas which appears later in this chapter could then be adapted to apply to a more rigid percentage equalizing grant.

in which the state would match local revenues in inverse proportion to the district's fiscal capacity.[23] The measure of fiscal capacity that has generally been used is the amount of property per pupil. However, in view of the shortcomings of this measure (as discussed in Chapter II), this study also considers such measures of the fiscal capacity of a district as income per capita, income per pupil, a combination of income and property per pupil, and the proportion of low income families.

The amount of aid which a district would receive at a given level of wealth and tax effort depends upon the type of formula utilized to determine the matching ratio parameters and the dollar amounts chosen for the formula. The range of possible formulas is unlimited. However, once the particular objectives are known, the spectrum narrows. Three types of variable ratio matching formulas are considered here to illustrate ways of meeting different goals.

Formula A: High level of aid to poorest districts; some aid to all districts.

Formula A provides a district with state matching funds per dollar of local revenue in proportion to the district's relative fiscal capacity where relative fiscal capacity is the ratio of the district's fiscal capacity to a particular base value.[24] If the statewide average is used as the base, the formula provides a district of average fiscal capacity a dollar of state revenue for every dollar of local revenue to be matched. Districts with above average fiscal capacity would receive less aid and districts with below average fiscal capacity would receive more than a dollar for each dollar raised locally.[25] This formula provides a more than proportional increase in the amount of aid as a district becomes poorer. It also insures that even the richest district receives some aid.[26]

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[23] "Fiscal capacity" is used in this context to describe various income and wealth related measures which are used as proxies for the district's true "fiscal capacity." It is recognized that a true measure of "fiscal capacity" would have to take into account the stock of real and personal wealth and the various income flows, as well as the financing demands arising from other public services.

[24] State Aid = (1 ÷ Fiscal Capacity Index) x Local Revenue
The fiscal capacity index is the ratio of the district's fiscal capacity to the chosen base. Ordinarily the base will be the statewide average for the measure used.

To give an example based on property wealth as the measure of fiscal capacity, assume that the statewide average property value per pupil is $20,000. There are four districts of varying property wealth: District (1) has $5,000 per pupil, District (2) has $20,000, District (3) has $30,000, and District (4) has $40,000. With the statewide average property value as the base, the following table illustrates the operation of this formula.

District Property Wealth Per Pupil	Fiscal Capacity Index	State Aid Per Dollar of Local Revenue
$ 5,000	.25	$4.00
$20,000	1.00	$1.00
$30,000	1.50	$0.66
$40,000	2.00	$0.50

Thus the poorest districts receive a substantial amount of state aid, but the wealthiest districts also are aided. A district with five times the average property wealth per pupil ($100,000) would, under the above example, still receive twenty cents for each dollar of local revenue raised.

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[25] The base need not be set at the statewide average. The base can be lowered to provide more than a dollar to a district of average fiscal capacity for each dollar raised or can be increased to provide less than a dollar for such a district.

[26] Since 1 ÷ Fiscal Capacity Index never equals zero.

Formula B: Smaller amount of aid to poorest districts; no aid to wealthiest districts.

Formula B is based on the same ratio of district fiscal capacity to statewide average wealth (or any other predetermined base) as used in Formula A. Under this formula, the matching rate is determined by subtracting the district's fiscal capacity index from a maximum matching rate set by the state.[27] Districts whose fiscal capacity index exceeds the maximum matching rate receive no aid. To give an example using the same four hypothetical districts, if the maximum matching rate were set at 2, the result would be as follows:

District Property Wealth Per Pupil	Fiscal Capacity Index	State Aid Per Dollar of Local Revenue
$ 5,000	.25	$1.75
$20,000	1.00	$1.00
$30,000	1.50	$0.50
$40,000	2.00	$0.00

Under this version of the formula, the most that the poorest district (one of no wealth whatsoever) would receive per dollar of local revenue is twice what the district of average wealth receives, while under Formula A, a district one-fourth as wealthy as the district of average wealth would get four times what the latter district receives per dollar of local revenue.

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[27] State Aid = (Maximum Matching Rate - Fiscal Capacity Index) x Local Revenue. As in Formula A, the base can be lowered to provide more than a dollar to a district of average fiscal capacity or can be increased to provide less than a dollar for each dollar raised.

On the other hand, in contrast to the situation under Formula A where even the wealthiest districts receive some aid, under Formula B, any district with more than twice as much wealth ($40,000) as the state average would receive no state money.

Formula C: High level of aid to poorest districts; no aid to wealthiest districts.

Formula C, a combination of Formulas A and B, is designed to provide a more than proportionate increase in the rate of aid for the poorest districts, while simultaneously incorporating a steeper decline in the rate of aid to richer districts, with zero aid to the wealthiest.[28] In effect, Formula A is applied to districts with a fiscal capacity index less than one, while Formula B is applied to districts with an index greater than or equal to one. To illustrate with the same hypothetical districts, if the base remains the statewide average property wealth and the maximum matching rate is set at 2, the results of Formula C would be:

District Property Wealth Per Pupil	Fiscal Capacity Index	State Aid Per Dollar of Local Revenue
$ 5,000	.25	$4.00
$20,000	1.00	$1.00
$30,000	1.50	$0.50
$40,000	2.00	$0.00

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[28] State Aid = $\begin{cases} \text{(1 - Fiscal Capacity Index) x Local Revenue; if Index} < 1. \\ \text{(Maximum Matching Rate - Index) x Local Revenue; if Index} \geq 1. \end{cases}$

The following table summarizes the impact of the three formulas on the four hypothetical districts described above, using the statewide average per pupil property value as the base:

DOLLARS OF STATE AID PER DOLLAR OF LOCAL REVENUE

	Formula A	Formula B	Formula C
District (1)			
$ 5,000 per pupil	$4.00	$1.75	$4.00
District (2)			
$20,000 per pupil (Statewide average)	$1.00	$1.00	$1.00
District (3)			
$30,000 per pupil	$0.66	$0.50	$0.50
District (4)			
$40,000 per pupil	$0.50	$0.00	$0.00

As discussed above, the outcome of applying any of these formulas can be modified by shifting the base value or the maximum matching rate, or both. A more powerful method of control on expenditures would be to place a maximum limit on the amount of local revenue to be matched. Without such a restriction, some of the desired equalization may not occur, since wealthy districts may want to raise larger amounts of local revenues, even if they are matched at a very low rate, because of their relative ease of doing so. Poorer districts may not be able to increase their tax effort enough to generate the local revenue required to narrow the expenditure gap. A restriction on the maximum amount of local revenue to be matched would prevent the state from helping wealthy districts to increase the gap. A more severe restriction on district spending behavior would be for the state to set the total dollar amount, as with the usual foundation programs, to be funded out of combined local and state revenues and require each district to levy the taxes necessary to raise its share as determined by the formula.

2. Results of Analysis

The effects of a variable ratio matching program depend upon which measure of fiscal capacity is used, which base value is selected (statewide average or above or below that average), the type of formula as outlined above, and the extent of matching allowed.[29/]

The effect on the different categories of districts of selecting alternative measures of fiscal capacity or wealth has already been discussed in Chapter II. Central cities have higher per pupil property values than other types of school districts. Thus central cities will receive less state aid per dollar of local revenues than suburban or rural school districts if this measure is used as the basis for distributing state aid. If income, rather than property value, is used as the measure of fiscal capacity or need, the effect on the four types of districts will vary, depending upon whether per pupil or per capita income is used as the unit of measurement. Central cities benefit most under the latter because they have larger non-public school enrollments and because a somewhat smaller proportion of their population is of school age compared to suburbs or other types of districts.[30/]

[29/] The conclusions reported here are based upon simulations using the various formulas and certain restrictions on local revenues in all six states. However, the use of alternative fiscal capacity measures had to be limited to four states since income data were not computed for California or New York.

[30/] North Carolina exhibits a similar pattern among the largest counties and the medium and smaller sized counties. As discussed in Chapter II, there are no suburban districts in that state.

Other measures of fiscal capacity used in this analysis are (1) an average of per pupil income index and per pupil property wealth index and (2) the proportion of poor families in a district.[31] The advantage which suburbs derive from their lower property values per pupil in terms of receiving state aid under a variable matching ratio formula based on property wealth, is not significantly altered by using a combination of income and property value as the measure of fiscal capacity. This result is due to the use of a simple unweighted average in this analysis and the fact that a smaller difference exists between relative income and property indices based on a per pupil rather than a per capita basis.[32]

The use of the percentage of poor families offers the most dramatic contrast with the other measures of fiscal capacity. For example, using the percentage of poor families as the measure of fiscal capacity, and distributing funds on the basis of Formula A, Detroit would get $1.15 from the state for every dollar of local revenue. In contrast, if per capita income or per pupil property wealth were used, Detroit would get only $1.02 and $0.99 respectively. Even more startling, suburban areas of Michigan would get an average of $0.42 for each dollar of local revenue, using percent of low income families as the criterion for distributing funds, compared with $1.00 using per pupil property wealth. As with Detroit, rural areas of Michigan would benefit if the percent of poor families was the measure of fiscal capacity used. A similar pattern is found in all of the states where income data could be analyzed.

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[31] To obtain the proportion of poor families in a district, the percentage of federal joint income tax returns under $3,000 in adjusted gross income filed from that district in 1967 was used. Since the matching formulas provide more funds as the wealth index declines, the index variable used in this case is the inverse of the percentage of low income families.

[32] This alternative was considered because the State of Iowa has used a similar index in its distribution formula. The Iowa index is overwhelmed by the property measure because it utilizes the average of property and income based on the state average rather than an average of the relative index of each type of wealth. In addition, property is weighted by 0.7 and income by 0.3.

A more meaningful measure, from an economic viewpoint, would be to capitalize the flow of income from the real property and add it to income to obtain a measure of relative net worth.

Another way in which the impact of the variable ratio matching program can be affected is by changing the units in which the district's wealth is measured. The income and property measures utilized were based on pupil membership. In Michigan, this measure approximates enrollment (average daily membership), but for other states average daily attendance is used as the basic unit. A shift from ADA to enrollment as the unit of measurement upon which the distribution of state funds is based would benefit central cities in those states since their ratio of average daily attendance to enrollment is smaller than for other types of districts.

An approach with greater potential impact than switching from ADA to enrollment is the use of a weighted pupil unit. Such weights would allow the incorporation of more sophisticated measures of educational need and even cost differentials into the variable ratio matching formula. The successful application of this modification requires data on the numbers of students in categories of special need and on the appropriate weights to assign them. With limited data on the distribution of students by grade and the number of mentally and physically handicapped students, the impact of this shift was calculated for Delaware and Washington using both the property and income measures of capacity.[33] The changes were not dramatic, but they were consistently to the benefit of the central cities. If account is taken of the educationally disadvantaged or higher costs of teacher salaries, larger benefits accruing to the central cities may be expected.[34]

As discussed previously, the types of formulas used in this analysis differ in the maximum and minimum levels to be received or matched. Formula B, with its floor of zero aid for wealthier districts and a smaller range of matching ratios, reduces the average amount of state aid received per dollar of local revenue when compared with that received under Formula A. The amount of reduction depends upon the fiscal capacity measure used. In Michigan, the range in the reduction of state aid suburban districts is from twenty-six cents per dollar raised locally under either the per pupil income criterion or the percentage of poor families criterion, to six cents per dollar raised when using per pupil property values as a basis for matching state aid. The shift is even greater in the rural areas. The reduction in state aid per dollar of local revenues there, utilizing percentage of

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[33] The average fiscal capacity indices were:

	Property Per Pupil	Property Per Weighted Pupil	Income Per Pupil	Income Per Weighted Pupil
Delaware				
Central Cities	1.28	1.21	1.27	1.20
Suburbs	1.01	1.03	1.23	1.27
Washington				
Central Cities	1.41	1.31	1.17	1.12
Suburbs	0.88	0.92	1.00	1.01

The index for a district of average fiscal capacity would be 1.00.

[34] The disparity analysis demonstrated the concentration of the two groups, students qualifying under Title I of ESEA and members of minority groups, which serve as proxies for the educationally disadvantaged in the central cities. It was not possible to use a direct measure such as students scoring in the bottom decile on statewide reading tests for either of these states.

poor families as the measure of fiscal capacity, is from $1.79 under Formula A to $1.36 under Formula B.

Formula C, with its floor of zero aid for the wealthier districts but a large range of matching ratios similar to Formula A for the poorer districts, will produce average state aid levels between the levels for Formulas A and B. With suburban districts predominantly above average in fiscal capacity as measured by any of the income criteria, the Formula C average aid per dollar of local revenue is close to that for Formula B, which represents a significant reduction from the Formula A level.

Suburban districts do regain their advantage when property wealth is used as the measure of fiscal capacity, since many suburban districts have property values below the statewide average.

The central city of Detroit, on the other hand, experiences little change regardless of the formula used since it is close to the statewide average in almost all of the various measures of fiscal capacity.

The impact of alternative variable ratio matching formulas is demonstrated more sharply when districts within a particular category are examined. As shown in Chapter II, the suburban category of districts contains the greatest diversity, as evidenced by the existence of both high property wealth-low income districts and low property wealth-high income districts. The existence of the first type of district is due primarily to the concentration of industrial property. The Detroit suburbs provide good examples of each type: Hamtramck, the high property wealth-low income district, and Birmingham, a low property wealth-high income district.

Table III-11 contrasts the dollars of state aid per dollar of local revenue received under the various fiscal criteria for these two districts.

TABLE III-11

VARIABLE RATIO MATCHING GRANT DOLLARS OF STATE AID PER DOLLAR OF LOCAL REVENUE

	Property Per Pupil		Income per Pupil		Income per Capita		Percentage of Poor Families	
	Formula A	Formula B	Formula A	Formula B	Formula A	Formula B	Formula A	Formula B
High Property-Low Income								
Hamtramck School District	$0.50	$0.00	$0.63	$0.37	$1.06	$1.05	$1.16	$1.13
Low Property-High Income								
Birmingham School District	$0.83	$0.80	$0.47	$0.00	$0.49	$0.00	$0.33	$0.00

Hamtramck receives no state aid under Formula B using the property value criterion, while Birmingham would not receive any funds using any one of the three income criteria.

Setting limits on the amount of local revenue to be matched is an additional means of controlling the various effects the variable ratio matching formulas can have. Table III-12 demonstrates the program's impact, when the existing tax rates are maintained, and the local revenues currently being raised are matched. The amount of total program revenue correlates highly with the level of local revenues unless there are great differences among districts in the particular measure of fiscal capacity being used. For instance, under the per pupil property value criterion, the existing disparities among categories of districts are increased.[35/] The use of income per pupil and income per capita criteria results in a reduction of average suburban expenditure levels compared to those of smaller cities. In addition, under both of these criteria, in the case of smaller city districts and rural districts, the disparities in per pupil revenues increase considerably compared to the disparities when per pupil property wealth is used. The increased variation within these districts under the per pupil and per capita income criteria results from differences

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[35/] The coefficient of variation for the actual state and local revenues was .16 in 1968-69 and would have been .24 if the variable ratio program using the property criterion had been employed. This slight increase reflects the increased gap between suburban and rural districts. Both groups are below average in property wealth so the higher revenue effort of the suburban districts is reinforced by the distribution of state aid. It should be noted that within the suburban category, where there is little difference in tax rates (a coefficient of variation of .10) but where the property tax collections differ considerably (a coefficient of variation of .44), the program's effect is to reduce the coefficient of variation for total state and local revenues from the present .24 to .16.

in the distribution of property wealth compared with the distribution of income wealth. Under the property wealth criterion, the formula provides a balancing effect between districts with similar tax rates but diverse property wealth per pupil. However, under the income related criteria, the diversity in local revenue generated can be accentuated by the state revenues distributed under this formula.[36/]

The very large disparities among district categories in the percentage of poor families illustrates the strong shift in relative expenditure levels that utilizing this measure of fiscal capacity can produce. Rural areas, while levying an average tax rate, which is two-thirds of the suburban average rate, receive on average twelve percent more total revenue per pupil than suburbs.

As also can be seen in Table III-12, the mean state and local revenues under all the alternative criteria are larger than the existing level of state and local revenues. These formulas are calculated on the basis of a 50-50 sharing of revenue raising between the state and the local district for a district of average fiscal capacity. At present, Michigan contributes only 40.5 percent of non-federal revenues, so that the formulas as calculated represent an increase in the state's obligation.

Interestingly, if the objective is to equalize the dollars available per pupil in all school districts, then per pupil property wealth (the measure most frequently used at present) should be selected as the measure of fiscal capacity upon which the distribution of state funds is based,

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[36/] The impact on the ultimate distribution of state and local revenues after shifts in local behavior has not been calculated here. It is to be expected that the local adjustments will differ considerably under the various criteria for they imply in many cases widely different costs at the local level in raising a dollar for educational purposes.

TABLE III-12

VARIABLE RATIO MATCHING GRANTS RELATIONSHIP OF LOCAL REVENUES TO TOTAL PROGRAM REVENUES

MICHIGAN

	Actual State and Local Revenues Per Pupil 1968-1969				Total State and Local Revenues Per Pupil Under Formula C			
	Mean Tax Rate[1/]	Mean Property Tax Revenue	Mean State Revenue	Mean State and Local Revenues[2/]	Property /Pupil	Income /Pupil	Income/ Capita	Percentage of Poor Families
Central Cities	$1.04	$348	$262	$610	$696	$680	$706	$752
Suburban Areas	1.31	437	264	701	838	844	773	593
Smaller Cities	1.21	432	246	678	820	866	838	814
Rural Areas	0.86	234	281	515	520	588	539	665
TOTAL SAMPLE	$1.16	$386	$259	$645	$753	$773	$748	$721

[1/] Tax rate is expressed in dollars per hundred dollars of full value of property.

[2/] Local revenues are limited to property tax collections which comprise over 90 percent. of all local revenues.

since under this measure the disparities among all districts in the sample are the least.

Of course, this conclusion does not take into account the fiscal behavior of local school districts if a variable ratio matching program were introduced. For districts with smaller fiscal capacity, the price of education relative to other local public services will have declined, perhaps encouraging these districts to invest more in education than in other services.[37] Thus, the existing tax rates for public education may be raised more in the low fiscal capacity districts than in those with high fiscal capacity, unless the amount of local revenues to be matched by state funds is limited.

As noted above, the use of any criteria other than per pupil property wealth will result in greater differences in expenditure levels among districts. However, if instead of dollar equalization, the aim is to concentrate funds in particular districts on the basis of their special educational or fiscal needs, one of the other measures of fiscal capacity may be preferred. The choice of measure involves finding one that produces the desired distribution of funds.

In order to prevent wealthier districts from increasing the expenditure gap, limits can be placed either on the amount of taxes that can be levied or the amount of local revenues that the state will match. If the latter course is taken, there will be considerable differences in the tax effort which the districts will have to make to raise their local share. For example, among the suburban districts of Michigan, the range in mill rates required to raise $100 per pupil locally is from 1.3 mills in Dearborn to 6.5 mills in Lake Shore.[38] Table III-13 shows the average tax rate by type of district required to raise $100 of local revenues. Thus the variation in local revenues is eliminated, preventing the distribution of resources from being influenced by the amount of local revenue raised by each district, but differences in the local tax burden will have increased substantially.

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[37] Unless, of course, the state is supporting other local services with a more advantageous matching scheme. The most likely area for such a program is road construction and maintenance, but as demand in this area may be easily satiated, it will probably not be a strong competitive force for dollars which could be used for education.

3. Conclusion

In this section, the focus has been on the effects of variable ratio matching formulas on the distribution of educational resources and on the local tax burden. Special emphasis has been placed upon variations in the type of formula and parameters used, the measure of fiscal capacity employed, and the extent of matching permitted. For example, concentration has centered upon Michigan,[39] a moderate aid state, for which this type of program represents a realistic alternative to the existing state aid program. In the high aid states, the local role is too small to permit treating this alternative as a substitute for the existing program. Even as a supplementary program, the calculated results which indicate an increase in disparities are likely to be misleading because changes in local tax efforts may be significant. This may be especially true if the state,

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[38] The coefficient of variation in mill rates among suburban districts is a high .47, compared with .26 for rural areas and .20 for smaller cities.

[39] As mentioned earlier, Michigan was the only moderate aid state for which data on all the measures of fiscal capacity was available.

TABLE III-13

VARIABLE RATIO MATCHING GRANTS
UNIFORM LOCAL REVENUES PER PUPIL
Tax Rate Required to Raise
$100 in Revenue

	Average Tax Rate[1]
Central City	$0.29
Suburban Areas	$0.30
Smaller Cities	$0.28
Rural Areas	$0.37
TOTAL SAMPLE	$0.30

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[1] Tax rates are expressed in dollars per hundred dollars of full value of property.

in an attempt to reduce its role, allows the additional funds necessitated by inflation to be provided by a partnership arrangement rather than provide a "basic" educational program by itself.

C. Power Equalizing Formula

1. Description of Formulas

A scheme for distributing funds which takes into account both the relative property base and the level of tax effort of each district, called "power equalization," was first proposed by Professor Coons et al.[40/] The underlying principle of this approach is that the expenditure level of a district's education program should be determined solely by its tax effort, regardless of its property wealth. In effect, a guaranteed tax base is established for each level of effort as measured by the tax rate. The state then makes up the difference between a district's actual tax revenues and the amount that would be produced from the base guaranteed for its particular tax rate or level of effort. On the other hand, in high property value districts, the state would take away any local revenue in excess of the proceeds that would have been generated by the guaranteed base.[41/]

[40/] Coons. Clune, and Sugarman, Private Wealth and Public Education, Harvard University Press, 1970. As noted earlier, this alternative is an expansion of the percentage equalizing grant.

[41/]

$\text{State Aid}_i = r_i\ (\text{P.E.W.} \quad - W_i)$

$\text{P.E.W.} \quad = f\ (\ r_i\ )$

where

State aid$_i$ is the amount of the transfer to or from district i

r_i is the tax rate in district i

P.E.W.$_R$ is the guaranteed tax base for all districts with tax rate $r_i = R$.

W_i is the tax base in district i

f ( ) is the function chosen to relate the guaranteed tax base with any tax rate.

For wealthy districts ($W_i \quad \text{P.E.W.}_R$), State Aid will be negative.

An example of two specific formulas will clearly illustrate the operation of "power equaliaation." In Case A, the guaranteed tax base is a constant for all tax rates. For purpose of illustration, it is assumed to be \$50,000 per pupil. In Case B, the guaranteed tax bases increase with increases in the tax rate.[42/] With two districts, one with a property value of \$40,000 per pupil and the other with a per pupil property wealth of \$60,000, the two "power equalizing" formulas would produce the results shown in Table III-14 if their tax rates were equal. (For purposes of illustration, the tax rate is set at 1.1 percent).

If the poorer district had been taxing itself at a higher rate, for example at 1.65 percent, to offset the wealth advantage of the other district, "power equalizing" would produce the results shown in Table III-15. The "power equalizing" formulas thus assure that districts taxing themselves at the same rate will have the same amounts available for their educational program. These formulas also substantially reward districts with higher tax rates.

One of the stated aims of the formula, as initially proposed, is to provide equal dollars for equal effort without restricting local autonomy. In other words, districts could choose different tax rate levels, leading to different levels of spending. This will result, as shown in Table III-15, in unequal expenditures per pupil among districts because of differences in

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[42/] Case A: $P.E.W._R$ = \$50,000 per pupil for all tax rates

Case B: $P.E.W._R$ = \$50,000 per pupil R_i

where

$P.E.W._R$ is the "power equalized" guaranteed tax base for tax rate R

R_i is the property tax rate in district i expressed in dollars per \$100 of full market value.

TABLE III-14
POWER EQUALIZATION EXAMPLE
EQUAL TAX RATES

Case A

(1) District Tax Base	(2) District Tax Rate	(3) Property Tax Collections Per Pupil	(4) "Power Equalized" State Guaranteed Tax Base [1]	(5) State Aid [2]	(6) Revenues Available for Operating Expenditures Per Pupil [3]
$40,000	1.1%	$440	$50,000	$110	$550
$60,000	1.1%	$660	$50,000	-$110	$550

Case B

(1) District Tax Base	(2) District Tax Rate	(3) Property Tax Collections Per Pupil	(4) "Power Equalized" State Guaranteed Tax Base [1]	(5) State Aid [2]	(6) Revenues Available for Operating Expenditures Per Pupil [3]
$40,000	1.1%	$440	$55,000	$165	$505
$60,000	1.1%	$660	$55,000	-$ 55	$505

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[1] The "Power Equalized" State Guaranteed Tax Base is determined by

Case A: $P.E.W._R$ = $50,000 per pupil for all tax rates

Case B: $P.E.W._R$ = $50,000 per pupil x R_i

R_i is the property tax rate in district i expressed in dollars per hundred dollars of full market value.

[2] State Aid = District Tax Rate x ($P.E.W._R$ - District Tax Base)
(Col. 5) = (Col. 2) x ((Col. 4)- (Col. 1))

[3] Revenues = State Aid + Property Tax Collections
(Col. 6) = (Col. 5) + (Col. 3)

TABLE III-15
POWER EQUALIZATION EXAMPLE
DIFFERENT TAX RATES

Case A

(1) District Tax Base	(2) District Tax Rate	(3) Property Tax Collections Per Pupil	(4) "Power Equalized" State Guaranteed Tax Base [1]	(5) State Aid [2]	(6) Revenues Available for Operating Expenditures Per Pupil [3]
$40,000	1.65%	$660	$50,000	$165	$825
$60,000	1.10%	$660	$50,000	-$110	$550

Case B

(1) District Tax Base	(2) District Tax Rate	(3) Property Tax Collections Per Pupil	(4) "Power Equalized" State Guaranteed Tax Base [1]	(5) State Aid [2]	(6) Revenues Available for Operating Expenditures Per Pupil [3]
$40,000	1.65%	$660	$82,500	$701	$1,361
$60,000	1.10%	$660	$55,000	-$ 55	$ 605

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[1] The "Power Equalized" State Guaranteed Tax Base is determined by

Case A: P.E.W._R = $50,000 per pupil for all tax rates

Case B: P.E.W._R = $50,000 per pupil x R_i

R_i is the property tax rate in district i expressed in dollars per hundred dollars of full market value.

[2] State Aid = District Tax Rate x (P.E.W._R - District Tax Base)
(Col. 5) = (Col. 2) x ((Col. 4) - (Col. 1))

[3] Revenues = State Aid + Property Tax Collections
(Col. 6) = (Col. 5) + (Col. 3)

levels of effort elected.

The formula was examined using its most simple case, a constant guaranteed tax base (Case A in the example given above), and a guaranteed base which increases with effort (Case B in the example).

The choice of the property base is critical to determining the impact of the program. A high base will provide a windfall of dollars to many districts if they maintain current tax rates. While some of these funds might be used to meet previously unfulfilled educational needs or to reduce tax rates, it is possible that some money will be used for larger wage increases and unnecessary expansion of the educational program. The formula encourages growth in the educational sector because it distorts the relative price of education vis-a-vis other public services; that is, it becomes easier to raise a dollar for education than for police and fire protection, health care, recreation and other public services. When the guaranteed base increases with effort, the relative prices become even more distorted as the educational program is expanded.

A low guaranteed base presents other problems. It would require many districts to transfer funds to the state. Such transfers may encourage an exodus to private schools. A high property wealth community may be unwilling to raise its tax rate to maintain its programs at the previous level, because of the large outflows to the state that would be the result of such rates. Thus, the community would elect a low tax rate and a severely curtailed educational program which would be used only by those too poor to afford private schooling.

2. Results of Analysis

The two "power equalization" formulas described in the previous section as Cases A and B were utilized in the analysis.[43] For both Cases A and B, a high and low guarantee level were used.[44] The high level was set at the 90th percentile level of property wealth per pupil of the sample districts for each state analyzed. The low level was set at the average of suburban district property wealth per pupil.[45] For those states where state funding constitutes a high proportion of total state-local education support, and where local tax efforts are low, the formula was utilized as a means of supplementing existing state aid.[46] In the moderate aid states, the formula was used as a total replacement for current state aid programs.[47]

Table III-16 shows the impact of these alternatives on tax levies required to maintain the existing level of expenditures in districts in the states of Delaware and California.

Case A. In Case A, the tax rate required to maintain existing expenditure levels decreases as the level of the guaranteed base is increased. In Delaware, the use of the high guarantee (the 90th percentile level) **results** in substantial reductions in the local tax rates for categories of districts. Under the low guaranteed base (the suburban

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[43] Case A: Power Equalized Wealth Per Pupil = A
Case B: Power Equalized Wealth Per Pupil = A x R_i where A is an arbitrary constant and R_i is the district's tax rate expressed in dollars per $100 of full market value.

[44] Guarantee level here refers to the constant, A, described in the preceding footnote.

[45] Using the statewide average property value would probably be politically unfeasible because of the number of districts that would have to cut back their current programs.

[46] Delaware, North Carolina, and Washington.

[47] California, Michigan, and New York.

TABLE III-16

POWER EQUALIZATION FORMULA EFFECT ON AVERAGE MILL RATES

		CASE A				CASE B			
		LOW GUARANTEED BASE		HIGH GUARANTEED BASE		LOW GUARANTEED BASE[1/]		HIGH GUARANTEED BASE[1/]	
	CURRENT MILL RATE	REQUIRED MILL RATE	AVERAGE PERCENTAGE CHANGE	REQUIRED MILL RATE	AVERAGE PERCENTAGE CHANGE	REQUIRED MILL RATE	AVERAGE PERCENTAGE CHANGE	REQUIRED MILL RATE	AVERAGE PERCENTAGE CHANGE
DELAWARE									
CENTRAL CITY	6.6	7.8	17.3%	5.1	-23.2%	8.8	33.2%	7.1	7.8%
SUBURBAN	5.9	6.8	25.5%	4.5	-17.8%	8.0	55.7%	6.5	26.0%
SMALLER CITIES	5.5	4.2	-19.7%	2.7	-47.4%	6.4	27.6%	5.2	3.3%
RURAL	2.2	2.5	21.1%	1.6	-20.7%	4.8	146.7%	3.9	99.7%
TOTAL	4.9	5.4	16.4%	3.5	-23.7%	7.0	73.8%	5.7	40.7%
CALIFORNIA									
CENTRAL CITIES	8.9	17.9	105.5%	10.0	14.4%	13.4	53.1%	10.0	14.3%
SUBURBAN	8.9	17.9	112.4%	10.0	18.2%	13.3	57.3%	9.9	17.4%
SMALLER CITIES	9.2	17.6	100.5%	9.8	11.6%	13.2	50.2%	9.9	12.1%
RURAL	7.7	16.2	119.2%	9.0	22.0%	12.7	71.5%	9.4	28.0%
TOTAL	8.9	17.8	107.5%	9.9	15.5%	13.3	54.9%	9.9	15.6%

[1/] Guaranteed Base = A x R_1 where A is a constant and R_1 is the district tax rate in dollars per hundred dollars of full value. The low and high guaranteed bases refer to the constant, A, since the guaranteed base varies with the district tax rate.

district average property value), tax rates will increase in all but the smaller city district category.

The variations which occur within the categories of districts in Delaware should also be noted. In general, the suburban districts experience the largest increase in tax rates among the various categories of districts when the guaranteed base is low and have the smallest reductions in tax rates when the guaranteed base is set at a high value. Yet, the suburban De La Warr district gains substantially under both options. De La Warr is able to reduce its tax rate by 46 percent with the low guaranteed base and 65 percent with the high. Rural districts generally benefit from power equalization in terms of tax reduction, but rural Cape Henlopen must raise its taxes -- 119 percent at the low value and 43 percent at the high value -- which is more than any other district, including the wealthy suburban district of Alexis I. DuPont.[48]

In California, where the formula aid is analyzed as a substitute for the existing combined state-local education programs, the required rate increases are much higher. Such a result is expected when the equalization value is low (the suburban average wealth level) since, as noted in Chapter II, suburban districts fall below the state average in property wealth. However, the average rate increases with the high guaranteed base (the 90th percentile level) indicate that wealthy districts will receive less aid than at present.

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[48] It should be noted that the average values for district categories are weighted by property value to demonstrate the average impact on a dollar of property. Thus, within a district category, while many jurisdictions with low proprety values may benefit, these benefits do not contribute enough to offset the losses to high property wealth districts. (A much different picture would result if the impact were calculated for the median taxpayer). Thus, among the rural districts in Delaware, only three districts have to increase their tax rate in Case A, using the low guaranteed base, but the magnitude of the increase results in a positive overall average increase for rural areas.

Case B. The results of applying the Case B formula illustrate an anomaly which arises from a common misunderstanding regarding school financing. It is generally believed that low property wealth districts have very high tax rates to maintain some form of equality with high property wealth districts. As the disparity analysis indicated, the lowest wealth districts are located in rural areas and their tax rates are also generally the lowest. On the other hand, some of the highest tax rates are found in wealthy suburban districts. Since the objective of the Case B formula is to increase the guaranteed tax base for districts with higher mill rates, the relative disadvantage of rural districts is accentuated.

Another facet of the Case B formula is illustrated by comparing the results for Delaware and California. Delaware experiences large upward shifts in the tax rates required to maintain current expenditure levels compared to those in the Case A formula. This is a result of the Case B formula, where the tax rate, expressed in dollars per $100 of full market value of property, is the multiplier of the constant guaranteed base. Thus any district with a tax rate of less than $1.00 per $100 market value has a smaller guaranteed base from which its revenues are calculated. Delaware, therefore, with its much lower tax rates than California, must increase them by a greater percentage to maintain existing programs.

This phenomena again illustrates the problem of choosing the formula that determines the guaranteed tax base. If the Case B type formula is to be used and it is not desirable to force rural districts to make large increases in their tax rates to maintain existing expenditure levels, the constant will have to be set at an extremely high level. Such a constant will distort even more the cost of raising a dollar for education for other types of districts with higher tax rates as their guaranteed tax base diverges more sharply from the actual property base which supports other services.

Additional State Costs. An important issue in considering the power equalization scheme is the increased cost to the state. An accurate prediction of these costs requires knowledge of the tax rates which will be levied by all the districts in the state. Since Delaware is the only state where all districts are included in the sample, this analysis was undertaken only for that state. Table III-17 indicates the additional costs to the state under the assumption that local districts will continue to tax at their present rate.

TABLE III-17

POWER EQUALIZATION PROGRAM COSTS IN DELAWARE

	Case A		Case B	
	Low	High	Low	High
Actual Cost	$1,534,000	$9,078,400	-$4,021,800	$597,430
Percent Increase in Current State Revenues	3.0%	17.5%	-7.7%	1.2%
Percent Increase in Current State-local Revenues	2.4%	14.4%	-6.4%	1.0%

The table indicates the large increase in the state's level of school support when the high guarantee base is used as compared to the low base. The percentage increases are not large for Delaware, reflecting the already large state contributions and the low tax rates of local districts.

The decreased state costs that result from application of Case B with a low guaranteed base illustrate the penalizing effect of this formula on districts with lower tax rates.

Among the major difficulties with the "power equalization" approach, one of the most formidable is that the fiscal impacts are not readily predictable because of unanticipated shifts in behavior. This uncertainty was disregarded to perform the calculations discussed above by assuming that localities would continue to tax themselves at the same rates.

Yet it seems logical to assume that districts with high property values would try to avoid raising sizable amounts of revenue that would promptly be siphoned off by the state for use in poorer districts. Since each district can choose its own level of tax effort, the result could be even greater disparities in per pupil expenditures among districts. Short of an actual test, therefore, one may only guess at the likely effects of the "power equalization" alternative on these disparities.

A particular "power equalizing" formula could be utilized, however, in a way that might sharply reduce disparities in effort. For example, the formula would provide for a guaranteed base which increased with increases in tax effort, but only within a narrow spectrum of tax rates. Below and above this range, the guaranteed tax base would decline sharply, to encourage districts to tax only in that range. This would produce more nearly equalized funding levels throughout the state. In the absence of a behavioral model, it is not possible to determine whether such a system of incentives and disincentives would produce such a response.

II. PARTIAL STATE FUNDING: SPECIAL PURPOSE AID

A. Introduction

The previous section has suggested some alternative ways of distributing state aid to local school districts based on various measures of fiscal capacity or need. These alternative programs were designed as matching programs, under which the local districts would be required to raise a portion of the revenues for education.

This section looks at various measures of educational need as the basis for distributing state aid. It seems unlikely, however, that states will use these measures, contrary to their use of fiscal measures, as the principal basis for distributing funds. Hence, in this analysis, these programs are viewed as supplemental programs based on various education need criteria. Two types of grants are considered -- direct target pupil flat grants to supplement the existing programs in local school districts, and a variable ratio grant, requiring matching funds from local districts.

B. Supplemental Grant Programs for the Educationally Disadvantaged

1. Description of Formulas

Several hypothetical state aid formulas devised to supplement programs provided to the educationally disadvantaged are analyzed in this section. The basic assumption of this approach is that additional resources are needed to raise the achievement levels of pupils who are now handicapped in learning because of their socio-economic background. To design such programs, the first major concern is to identify precisely the particular pupils who need special help. The second is to determine the amount of assistance required to improve their performance.

Available data do not provide consistent or generally acceptable measures of educational need. In the absence of such data, reliance is frequently placed on membership in particular socio-economic or racial groups as a proxy for identifying low achieving students. Three such proxies are used in this study. For the purposes of this analysis, eligibility for federal funds under Title I of the Elementary and Secondary Education Act was used as one proxy. (Under this legislation, students who are eligible to participate in this program are either from families earning an income of $2,000 or under, according to the 1960 Census, or are from families who are welfare recipients.) A second proxy is membership in a minority racial-ethnic group, as classified by the HEW Office for Civil Rights.[49/] Where data were available, the distribution of funds in accordance with these indirect measures was contrasted with a more direct proxy: students in elementary grades who scored below the 10th percentile for the state on statewide reading achievement tests.[50/]

[49/] These include American Indian, Negro, Oriental and Spanish-surnamed Americans. U. S. Department of Health, Education and Welfare, Office of Civil Rights, Directory of Public Elementary and Secondary Schools in Selected Districts: Enrollment and Staff by Racial/Ethnic Group, Fall, 1968.

[50/] It is obvious that these are the crudest of proxies and are likely to be over-inclusive. Some low-income students or students receiving welfare may be high achievers; some students who are members of racial-ethnic groups come from economically advantaged, highly educated families; some low scoring children on standardized reading achievement tests may actually be high achievers in other areas if measured by more appropriate testing devices. However, a number of studies have established a close relationship between socio-economic factors and student achievement. See A. Burke, J. Kelly, and W. Garms, Educational Programs for the Culturally Deprived - Need and Cost Differentials. Special Study No. 3 for the National Educational Finance Project. Albany: State University of New York, 1970, pp. B13-22 for a review of some of these studies.

Using these admittedly imperfect measures of need or degree of disadvantage, how shall students so identified be funded? Ideally, a target pupil grant program would be able to categorize each student according to the precise level of educational resources it would take to bring him up to a certain achievement level and would distribute funds to the districts, and among individual students within those districts, in proportion to their need. However, such a program is impossible in view of the present lack of knowledge as to the amount of resources required for various pupils to achieve desired performance levels.

One funding approach examined was a flat target pupil grant. Under this system, a state would provide funds to each district according to the number of its students who have been identified as members of the particular target group.

Another funding approach was developed and analyzed, under which the state would distribute funds according to the ratio of a school district's average achievement level on statewide reading achievement tests to the statewide average achievement level.

While the proxies of student need utilized in this analysis may be relatively reliable as predictors of low achievement, even though somewhat over-inclusive, the appropriate level of support is still a matter of almost total speculation. This report makes no pretense of attempting to resolve this issue. Rather, grant levels were selected somewhat arbitrarily in order to have some way of testing the distribution and fiscal impact of supplemental grants based on need, on various types of school districts within a state, and of estimating the financial burden on the state itself.

Three grant levels were selected for purposes of analysis -- a minimum grant for the target pupil equal to the present statewide average federal grant per Title I child in each state, varying from $138 in Michigan and North Carolina to $200 in New York; a flat $300 grant for all target pupils; and a maximum grant which would provide each target pupil with double the amount of a state's present basic program for the average child.

2. Results of Analysis

(a) Flat Target Pupil Grant Formula

In all the states studied, with the exception of North Carolina, target pupil aid, when distributed on the basis of any of the three proxies for low achievement outlined earlier, would be overwhelmingly concentrated in the central cities. This is demonstrated by the pattern for Michigan as shown in Table III-18 and Figure III-18(a). A similar pattern is shown for New York in Figure III-18(b). In North Carolina, the concentration would be in the medium and small sized counties, reflecting the lower incomes of minority enrollment in these areas, as discussed earlier in Chapter II.

Comparing the various proxies for the industrialized states, the racial-ethnic criterion provides the largest share for cities while distributing very little to rural areas. Rural areas benefit more from the use of the Title I criterion, reflecting the lower incomes in those areas. The low achievement criterion correlates more highly with the Title I criterion than with the racial-ethnic criterion.[51]

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[51] Achievement data suitable for this analysis were available only for the states of New York and Michigan.

TABLE III-18

AID FOR THE EDUCATIONALLY DISADVANTAGED
DISTRIBUTION OF AID AMONG TYPES OF DISTRICTS

	PERCENT ADA OF TOTAL STATE ADA	DISTRIBUTION OF AID TO TITLE I PUPILS	DISTRIBUTION OF AID TO MINORITY GROUP PUPILS	DISTRIBUTION OF AID TO LOW ACHIEVING PUPILS
MICHIGAN				
CENTRAL CITY	28.3%	55.1%	67.3%	50.7%
SUBURBS	26.0	8.9	5.6	14.4
SMALLER CITIES	33.7	27.9	25.7	29.6
RURAL	12.1	8.1	1.3	5.2
TOTAL SAMPLE	100.0%	100.0%	100.0%	100.0%
NORTH CAROLINA				
A. COUNTIES WITH POPULATION OVER 100,000				
1. ONE ADMINISTRATIVE UNIT	15.2%	6.0%	14.2%	N/A[1/]
2. SEVERAL ADMINISTRATIVE UNITS	19.9	11.5	16.7	N/A
B. COUNTIES WITH POPULATION BETWEEN 10,000 & 100,000				
1. ONE ADMINISTRATIVE UNIT	7.7	6.7	6.8	N/A
2. SEVERAL ADMINISTRATIVE UNITS	32.4	34.3	32.6	N/A
C. COUNTIES WITH POPULATION LESS THAN 10,000				
1. ONE ADMINISTRATIVE UNIT	17.2	30.1	22.9	N/A
2. SEVERAL ADMINISTRATIVE UNITS	7.7	11.4	6.9	N/A
TOTAL SAMPLE	100.0%	100.0%	100.0%	100.0%

[1/] North Carolina does not administer statewide achievement tests.

FIGURE III-18(a)

MICHIGAN

AID FOR THE EDUCATIONALLY DISADVANTAGED

Distribution of Aid by Type of District

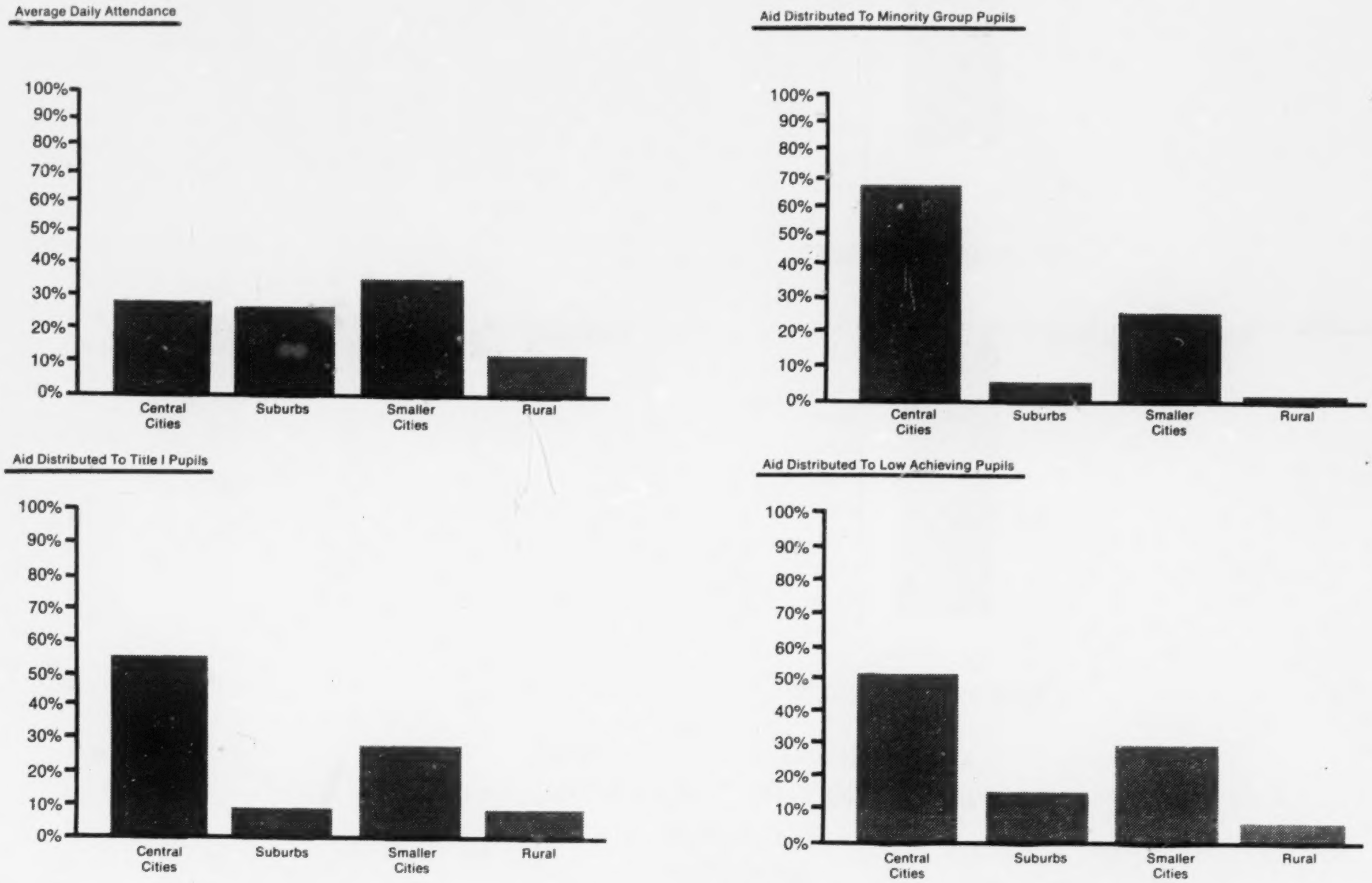
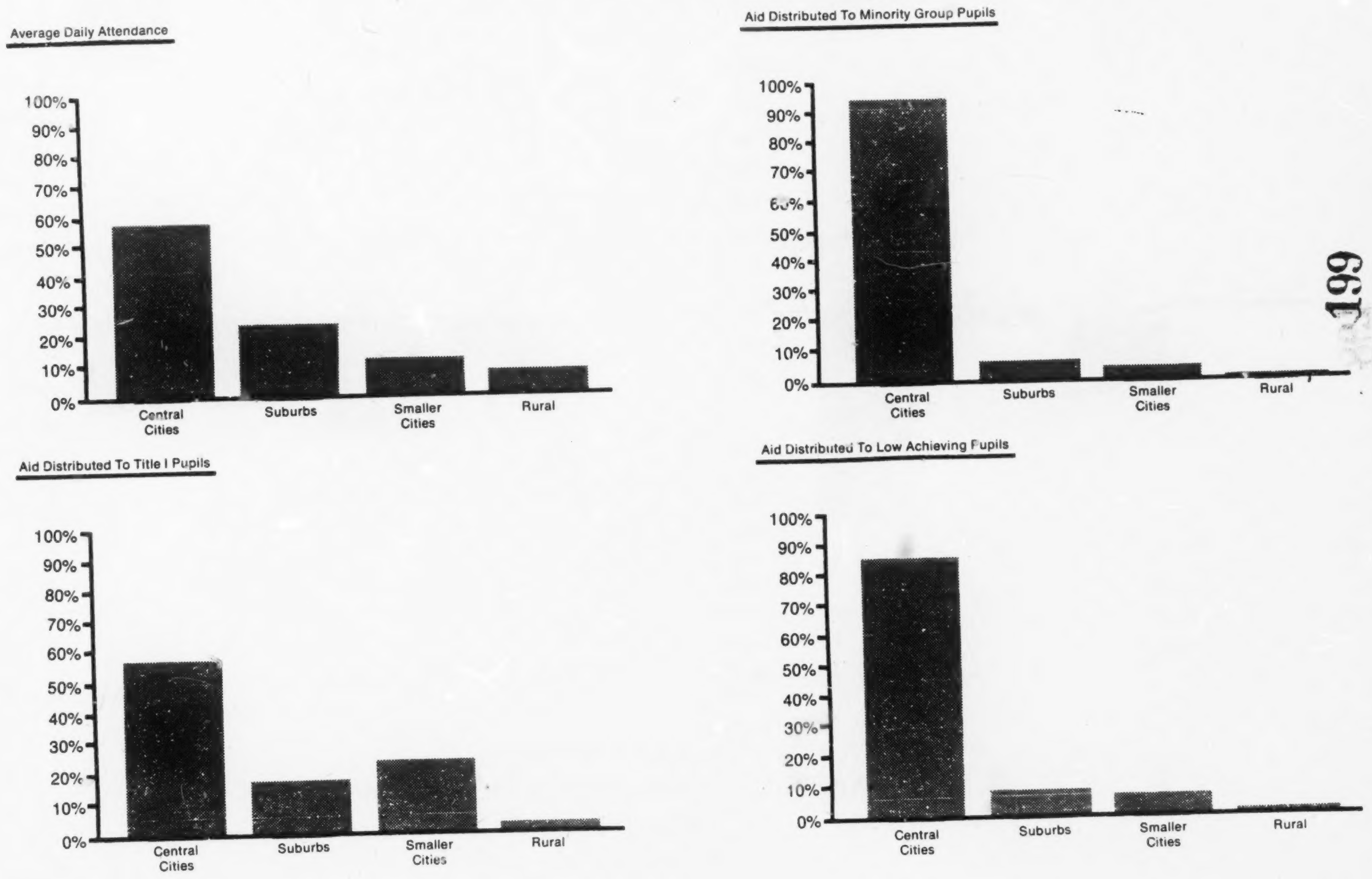


FIGURE III-18(b)

NEW YORK

AID FOR THE EDUCATIONALLY DISADVANTAGED

Distribution of Aid by Type of District



Average Daily Attendance

Aid Distributed To Minority Group Pupils

Aid Distributed To Title I Pupils

Aid Distributed To Low Achieving Pupils

The first value utilized in this analysis (designated the minimum level grant) is the statewide average grant per Title I recipient received under the Elementary and Secondary Education Act. In this case, the percentage increase for the target pupil over the current statewide average per pupil expenditure (state-local funds combined[52/]) ranges from a low of 15 percent in New York to a high of 30 percent in North Carolina. With the second value used, the $300 grant per target pupil, the respective percentage changes are 22 percent in New York and 65 percent in North Carolina.

The assumption underlying these figures is that the additional aid would be a direct educational investment in the target pupil, supplementing the amount provided him under the regular program. However, if the aid should become part of the district's general fund and is spread out for the use of all students, the potential increases in aid to the target students decline dramatically, as demonstrated in Table III-19.

The costs of these aid programs vary sharply depending upon the measure used. The least expensive would be a program aimed at identifiable low achievers rather than one which uses a less direct proxy for the educationally disadvantaged. In Michigan, for example, providing the maximum grant to low achievers involves only a 4.8 percent increase in state-local education revenues, while providing the maximum grant for the racial-ethnic targets would cost 26 percent more than the present

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[52/] Federal funds currently expended are excluded since, in the absence of a federal revenue sharing program, federal funds would not be comingled with the state-local compensatory funds but would remain as separate categorical programs.

TABLE III-19

AID FOR THE EDUCATIONALLY DISADVANTAGED
PERCENT INCREASE IN PER PUPIL EXPENDITURES

	PERCENT INCREASE IN PER PUPIL EXPENDITURES FOR TARGET PUPILS UNDER CONCENTRATION REQUIREMENT		PERCENT INCREASE IN CURRENT PER PUPIL EXPENDITURES FOR TARGET PUPILS WITHOUT CONCENTRATION REQUIREMENT			
			NORTH CAROLINA		NEW YORK	
	NORTH CAROLINA	NEW YORK	TITLE I	MINORITY	TITLE I	MINORITY
MINIMUM LEVEL GRANT 1/	29.9%	15.0%	6.3%	9.3%	1.5%	4.9%
$300/TARGET PUPIL GRANT	64.7%	22.4%	13.6%	20.1%	2.4%	7.4%
MAXIMUM LEVEL GRANT 2/	100.0%	100.0%	21.1%	31.1%	10.6%	33.1%

1/ Grant equals the federal grant per eligible Title I child in the state.

2/ Grant equals statewide average per pupil expenditure from state and local sources.

state-local budget.[53] These large differences in costs indicate that it would be substantially cheaper if the low achievers could be identified directly instead of distributing funds to all members of a particular group just because of the high correlation generally found between membership in the group and low achievement.

(2) State-Local Matching Ratio Formula

The impact of the variable ratio matching formula, based on the school district's average achievement level, depends both upon the distribution of the average test scores and the amount of local revenue currently raised.[54] The resulting distribution of state dollars, as shown in Table III-20, indicates the small variance in distribution of average test scores among the four types of districts.[55] Note that in the case of Michigan and New York, the highest achieving districts (which therefore get the least amount of state funds) are the rural districts, while the districts with the lowest average achievement levels are the central cities. This relationship does not hold true for California, where the

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[53] Part of this difference is due, of course, to the fact that the nature of the data limited the analysis of low achievers to elementary school students, while the other proxies encompass all grades. However, assuming a uniform distribution of the other proxy groups between elementary and secondary schools, the cost for the maximum grant program utilizing the racial-ethnic proxy would still involve a 15 percent increase over that for low achievers. This increase is probably underestimated since the distribution of low achievers is probably skewed toward the elementary grades, given the higher dropout rates of low achievers in the secondary grades.

[54] This alternative could be tested only in the states of New York, California and Michigan because of the availability of achievement score data in these states.

[55] Previous studies have shown that often the most extreme variations in pupil performance are found within individual school districts, especially central cities, rather than between school districts. See, e.g., Thomas, School Finance and Educational Opportunity in Michigan, Michigan Department of Education, 1968.

TABLE III-20

AID FOR THE EDUCATIONALLY DISADVANTAGED

VARIABLE RATIO MATCHING GRANT BASED UPON AVERAGE READING ACHIEVEMENT SCORES STATE CONTRIBUTIONS PER DOLLAR OF LOCAL REVENUE RAISED

	California	Michigan	New York
Central Cities	$1.04	$1.10	$1.09
Suburbs	.96	.95	.90
Smaller Cities	.98	.98	.94
Rural Areas	1.04	.94	.88

rural and the central city districts have the same achievement levels, below those of suburbs or smaller cities. Even in the case of a matching formula which requires every district to raise the same number of dollars locally, there is only a 24 percent difference in the average amount paid to rural areas and that paid to the central cities in New York State. This is in startling contrast to the differences of 99 percent using the Title I criterion and almost 2800 percent using the racial-ethnic criterion in the flat grant target pupil formula described in the previous section.

If no restriction is placed on the local matching revenues, the high local revenues presently raised in suburban districts would result in a larger proportion of aid going to suburban areas under this formula than these districts would receive under the target pupil flat grant formula.

C. Functional Aid Formulas

1. Non-instructional Aid Alternative

One proposal that has been suggested to provide fiscal relief for school districts and to reduce the level of disparities among school districts, is that the state assume the costs of non-instructional functions in the education budget. This proposal is based upon the belief that the resources of some districts are severely strained due to extraordinary expenditures for certain non-instructional items, diverting needed dollars away from the educational program and further contributing to the disparities among districts in the educational resources available for each child.

The kinds of expenditures most frequently suggested as those which the state should assume, in addition to construction costs, are plant operation and maintenance costs (which are often high in urban districts) and transportation costs (which are high in rural areas).

However, as shown in Chapter II, these items constitute only a minor portion of the total education budget. Overall, the disparities in non-instructional expenditures within a state are slight. The low plant operation and maintenance costs in rural areas offset the high transportation costs of those areas, and the reverse is true in urban areas.

If states assumed the full current costs of these three items -- plant operation, plant maintenance, and transportation -- substituting these payments for existing state aid programs, state support would be reduced from the present level in all states studied. If such a program were in addition to the existing state program of support, local school districts would receive relatively minor amounts of additional revenues from the state. Table III-21 shows that for the State of New York, such a funding alternative would result in an 8.8 percent increase in state funds on a statewide basis.[56/] The disparity analysis in Chapter II demonstrated the small proportion of the education budget devoted to these functions in all sample states. An additional factor reducing the potential impact of this alternative is that most states analyzed already provide substantial support for transportation. Thus, this laternative is of little practical value.

2. Instructional Aid Alternative

A variant of this functional aid alternative proposes that the state assume the responsibility for total instructional costs, allowing local school districts to fund non-instructional costs from their own revenues. The rationale for this approach is that central city districts have high costs because of a greater concentration of students who require

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[56/] The New York example was calculated only for plant operation and maintenance expenditures, since the state already has a categorical program which pays 90 percent of a local district's "approved" transportation costs. Thus, the percentage increases in state funds would be higher in states not now paying full transportation costs.

TABLE III-21

FUNCTIONAL AID FOR PLANT MAINTENANCE AND OPERATION COSTS

NEW YORK
1968-69

	AID PER PUPIL	AID AS A PERCENTAGE OF TOTAL CURRENT OPERATING EXPENDITURES
Central Cities	$106	8.3%
Suburban Areas	119	9.5%
Smaller Cities	103	9.6%
Rural Areas	94	9.2%
TOTAL SAMPLE	$108	8.8%

additional education resources -- e.g., the mentally and physically handicapped, the educationally disadvantaged, vocational students. Rural areas, on the other hand, with small enrollments, have higher costs stemming from diseconomies in providing comparable programs.

It would not be feasible to have such an alternative designed so that the state picked up the entire instructional portion of a local district's budget without any limits on the size of that budget. Thus the state would have to determine what was an adequate basic program and what types of students required funds over and above the basic program and in what amounts. Decisions would also have to be made as to whether small inefficient rural districts should be funded or required to consolidate.[57/] Thus, the state would of necessity be directly involved in decisions affecting a district's educational program. In short, this alternative would have the same disadvantages that critics of full state funding find -- interference by the state in local district fiscal decision-making -- but would not have the advantages of complete equalization of per pupil expenditures since non-instructional expenditures would still be funded locally. Moreover, the disparities in tax burdens among districts would remain, since districts with low property values would have to have higher tax rates in order to raise the same amount of revenues as wealthier districts to fund all non-instructional costs.[58/]

57/ A number of states such as New Hampshire and Michigan, now provide incentive payments for consolidation.

58/ The education finance system in existence in the State of Hawaii until 1965 required local units (counties) to fund non-instructional costs out of local revenues, the state paying total instructional expenditures. This system resulted in inequalities among rural and urban counties in terms of facilities and tax burdens. The effect of this system and the rationale behind moving to a fully state-funded system are described in greater detail in Chapter IV of this report.

To estimate the impact of such an approach, without knowing what a state would determine was the appropriate level for a basic instructional program, the present expenditure levels for instructional costs in each district were utilized in the analysis. This alternative was simulated as a substitute for the current state aid program. Table III-22 shows how much additional aid each type of district in Michigan would receive from the state beyond what is currently received.

The drawbacks of this alternative as simulated are evident from an examination of Table III-22. The two types of districts often cited as having special needs -- central cities and rural districts -- would receive the least amount of additional state aid. However, this is due to the necessity of using the existing budget for the instructional program of each district and thus reflects the inequalities in the existing expenditure patterns. This is not to say the existing expenditure patterns are completely inappropriate. For example, rural areas may have lower expenditures because equivalent instructional resources cost less in rural areas than in urban areas.

This particular proposal for financing education clearly is not a solution for dealing with the existing disparities in educational spending among districts and might even increase the disparities. And, as already noted, if the state's approach to funding instructional costs were anything other than merely to pay the current instructional expenditures in full in each district, then issues such as that of local autonomy and the complexity of administering such a plan might be significant.

There is little merit in leaving the responsibility for raising revenues for non-instructional functions with local districts, particularly since these are unrelated to instructional need. For example, a low

TABLE III-22

FUNCTIONAL AID FOR INSTRUCTIONAL COSTS

MICHIGAN

	Current Local Revenues Per Pupil	State Aid for Instructional Expenditures Under Functional Formula	Total State-Local Revenues Per Pupil Under Functional Formula	Existing State-Local Program
CENTRAL CITY	$542	$348	$ 890	$626
SUBURBAN AREAS	578	437	1,015	718
SMALLER CITIES	526	431	957	693
RURAL AREAS	393	233	626	532
TOTAL SAMPLE	$523	$385	$ 908	$661

1/ Current local revenues are held constant. Total state-local funds under functional aid formula equals current local revenues plus state revenues for assumption of all instructional costs.

density rural district located in a mountainous region is likely to have high transportation and plant operation costs, which are totally independent of the education program. Thus, an alternative where the state assumes full responsibility for instructional expenditures, while it may appeal to those who are opposed in principle to total state funding, appears to have no fiscal or educational advantages over full state funding.

III. FULL STATE FUNDING FORMULAS

A. Introduction

The proposal that the state government assume the total cost of education has two main goals -- to equalize education for all pupils within the state and to remove school finance from primary dependence on local property taxes. Equalization of educational programs can be either in dollars or in real resources. It does not necessarily mean equal dollars for every pupil but can be regarded as applying to particular categories of pupils, while permitting inequalities between categories. For example, equal dollars or an equal number of teachers might be provided for all elementary students in the state, but different amounts of money or a different pupil-teacher ratio might be considered appropriate for secondary students.

If the assumption of all elementary and secondary education costs by the state resulted in the complete elimination of the local property tax for school purposes, education revenues in most states would very likely come from taxes that are considered to be more progressive than the property tax, such as a graduated state income tax. However, full state funding could also lead to adoption of a statewide property tax as a substitute for revenues previously raised through the local property tax.

This would not necessarily increase the equity of the tax structure among income groups but would result in increased equity between taxpayers in the same income group from different districts. This results from the removal of the large inequalities in property tax burdens between individuals of the same income group located in different districts. These inequalities stem in part from large differences among districts in property values, tax rates, and assessment practices.

Full state funding has broad implications for the autonomy of local districts. At a minimum, it places a budget constraint upon the educational program of each district. Under such an alternative, districts would not be allowed to supplement the state-provided revenues with revenues raised through local taxes. Thus the revenues available for education would be a reflection of the state's legislative or administrative judgment of what a district's basic educational program should be. Federal revenues presumably would remain as supplements to the state revenue, but unless federal revenue sharing is substituted for current categorical programs, the use of these funds is restricted to specific educational problems defined by the authorizing legislation.

Full state funding could also go beyond merely limiting district expenditure levels. The state, for instance, could choose to supply school districts with the real resources required for their educational programs, mandating the numbers of teachers, aides, counselors, books, and other similar resources. Even the hiring and assignment of personnel could be undertaken at the state level.

Thus, the amount of local autonomy permitted under various full state funding alternatives could vary. The state could choose any level of control, granting as little or as much decision-making power to local districts as it desired. Short of giving districts the option of supplementary local funding, states could assure districts the maximum degree of flexibility by giving them complete freedom to make allocations within their budget constraints.

B. Description of Formulas

1. Target Pupil Grants

A fully state funded program may be based upon target pupil grants. Each district would receive a grant dependent upon the district's number of "weighted pupils," as described below. This option, with no restriction placed upon how these funds are to be spent, would give districts the maximum possible flexibility under full state funding, restrained only by the size of the total budget.

In developing this formula, a particular category of students is assigned a weight of 1.0 and all other categories of students are weighted relative to this base group. The weight for any particular target group is the ratio of the cost of achieving a set of goals for the pupils of that group, compared to the cost of achieving these goals for a pupil in the base group. For example, an objective might be to take into account the higher costs of educating disadvantaged students, physically and mentally handicapped students, or mentally gifted students, compared to the cost of educating average students. Other appropriate formulas would include weights for the costs of providing education at different grade levels, or for the higher costs of educating vocational students compared to liberal arts students.

After the appropriate weightings are determined for various student categories, other issues remain to be resolved. Equivalent dollars may be distributed to each category of student no matter where in the state the particular target pupils are located. Another approach, however, would be to focus on equalizing real resources for various target pupil populations, with a formula reflecting differences in prices among various areas of the state.

Obviously, finding the correct ratios to achieve the desired ends is a very complex process. It requires a thorough knowledge of the education process, the society's evaluation of the goals of the education system, and the economic structure of the state. As knowledge in all three areas is still extremely limited, any ratios used for full state funding can be only very crude approximations.

The weights assigned to the target pupil groups in this analysis were derived from the costs of exemplary programs for suburban school districts as given in McLure and Pence, Early Childhood and Basic Elementary and Secondary Education (National Educational Finance Project, Special Study No. 1, University of Illinois, 1970).59/ McLure and Pence do not provide adequate evidence to support their selection of particular target pupil populations or, more importantly, to support their cost ratios. The ratios used in this report to test a fully state funded approach based on target pupil grants must therefore be regarded as somewhat arbitrary.

59/ The weights for the various target populations derived from McLure and Pence are:

Kindergarten	1.11
Grades 1 to 6	1.00
Grades 7 to 12	1.19
Mentally and Physically Handicapped	2.23
Remedial & Compensatory	1.84
Vocational	1.68

In addition, data limitations in all of the states included in this study prevented an examination of some of the target populations McLure and Pence regard as requiring additional resources. In most of the states selected for testing this alternative, data on grade distribution for students enrolled in basic elementary and secondary programs and on the number of special education students were available. However, data was generally lacking on McLure and Pence's "remedial and compensatory" category. Consequently, Title I students and, for New York and Michigan, students scoring below the 10th percentile on reading achievement tests, were utilized as proxies for this category.

2. Personnel Unit Formula

An alternative method of full state funding which involves less local autonomy is the personnel unit formula. Under this approach, a state would provide real resources to local districts by allocating teacher positions, custodial positions, etc., and by purchasing books and supplies (or allocating funds designated for these purposes), distributing them either on a per classroom unit or on a per pupil basis. This alternative is similar to the current program in Hawaii where teacher positions are generally allocated on the basis of classroom units varying in size according to type of students (e.g., kindergarten, elementary, special), and where funds for supplies and texts are allocated on a per pupil basis.[60/] Delaware and North Carolina also have a somewhat similar program, in which the number of classroom units are computed according to types of students. Classroom units then become the basis for distributing

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60/ See Chapter IV for a more detailed description of the Hawaii program.

the real resources.[61] However, in the latter two states, unlike Hawaii, local districts are allowed to supplement the state allotment to an unlimited extent, both in terms of additional positions and additional dollars with local revenues. Thus neither North Carolina nor Delaware have a fully state funded approach.

The degree of a district's autonomy will depend upon the flexibility it has for making substitutions within either the personnel or non-personnel areas. Some districts may elect to use two teachers' aides to fill an allotted teacher position, or audio-visual equipment instead of some textbooks. Variations in price would not constrain districts in different parts of the state if statewide salary schedules for all personnel and statewide purchasing were instituted.

Simulation of this alternative involves calculations very similar to those used in the target pupil population grant formula described above. In this analysis, staffing ratios given in McLure and Pence[62] were used to determine how many personnel positions a district was entitled to according to the number of classroom units it had. In practice, the state would then hire teachers to fill the allocated number of positions according to a statewide salary schedule, or would provide funds for the district to hire them. Payments to districts with the same number of classroom units need not be uniform, but could vary according to the distribution of the education and experience levels of its teachers.

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[61] While Delaware allocates all personnel positions (including cafeteria and custodial workers) on this basis, the North Carolina formula is applied only to teacher positions.

[62] Op. Cit. Supra.

The distribution of education and experience levels cannot be projected nor can the statewide salary schedule that the legislature might elect be predicted. For purposes of analysis, therefore, the average teacher salary in suburban districts was used as the multiplier to determine teacher costs. Non-teacher costs were then derived by using the ratio of average teacher salary costs to all other current operating expenses for the state. These calculations, although they involve some arbitrary assumptions, enable one to make reasonable estimates of the costs of full state funding.

C. Results of Analysis

1. Impact on Disparities

Both the fully state funded target pupil grant formula and the personnel unit formula have a very significant impact in reducing differences in dollar per pupil expenditures within a state, as can be seen for Michigan in Table III-23 and Figure III-23. The largest reduction in disparities occurring within a single category of school district is in the suburban district category.[63/] The dollar differences which remain stem from two sources. First, federal program are not distributed on a uniform per pupil basis throughout the state.[64/] Second, there are differing costs among types of districts because students with special needs beyond the basic program are not uniformly distributed among the districts. When these cost differences are taken into account, there are even fewer disparities among districts.

[63/] The coefficient of variation for the target pupil formula declines from .23 to .15 while for the personnel unit formula, it declines to .14.

[64/] Table III-24 shows the reduction in variation among the four types of districts when federal revenues are excluded.

TABLE III-23

FULL STATE FUNDING
CURRENT OPERATING EXPENDITURES PER PUPIL

MICHIGAN

DISTRICT TYPE	PRESENT COE	TARGET PUPIL GRANT[1/]		PERSONNEL UNIT FORMULA[1/]	
		COE WITH NO LOCAL SUPPLEMENT	AVERAGE PERCENTAGE CHANGE	COE WITH NO LOCAL SUPPLEMENT	AVERAGE PERCENTAGE CHANGE
CENTRAL CITY	$696	$969	39.2%	$847	21.6%
SUBURBAN	778	802	7.2%	747	-0.1%
SMALLER CITIES	706	800	20.6%	724	8.1%
RURAL	527	795	61.0%	730	48.2%
TOTAL SAMPLE	$700	$848	27.2%	$765	14.6%

1/ The target pupils include kindergarten students, Title I eligibles as a proxy for educationally disadvantaged, and secondary school students (grades 7-12). Per pupil expenditures for grades 1-6 were used as the base.

FIGURE III-23

DISTRIBUTION OF REVENUES
FULL STATE FUNDING – TARGET PUPIL GRANT

STATE OF MICHIGAN 1968-1969

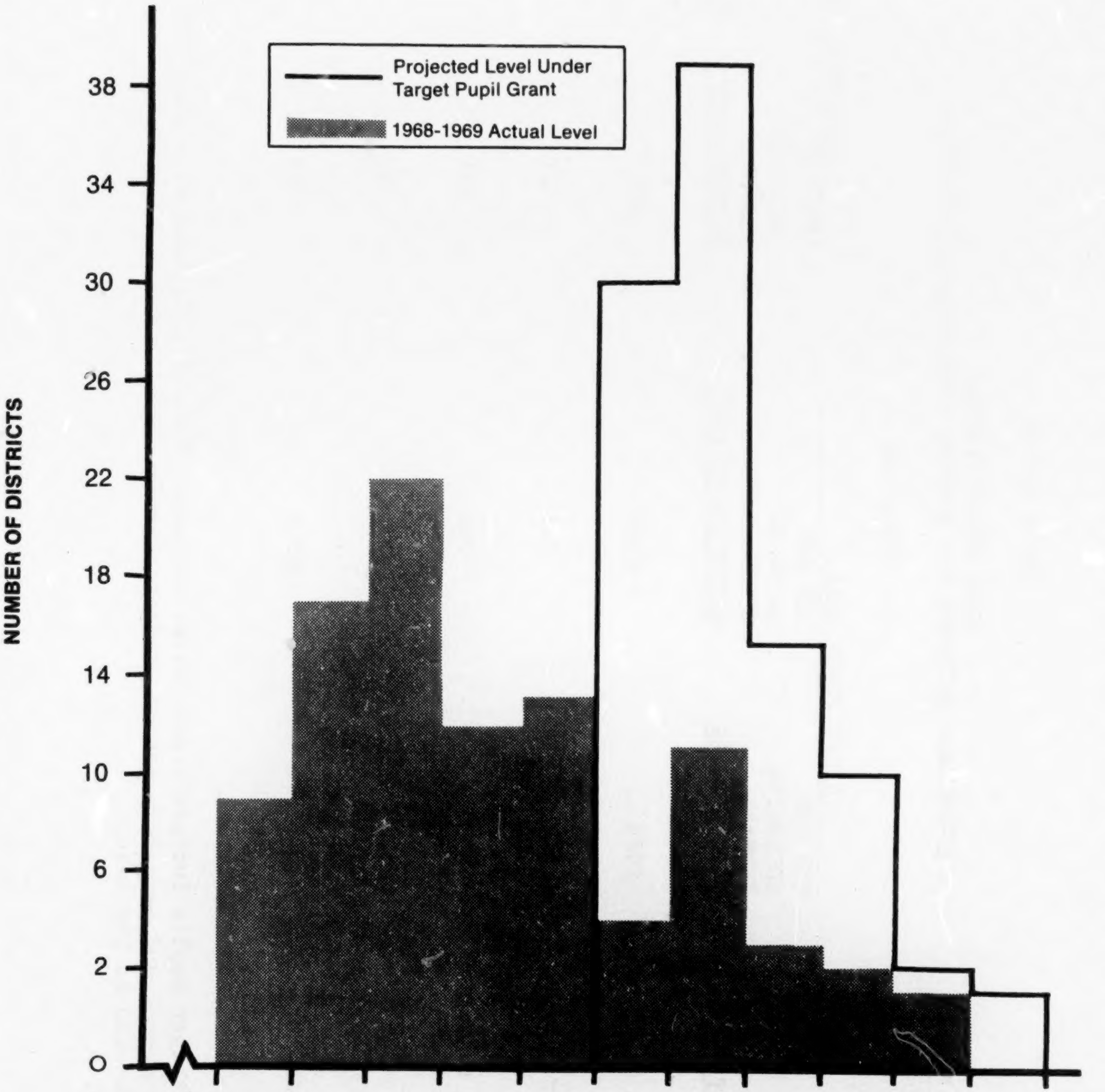

TABLE III-24

FULL STATE FUNDING
NON-FEDERAL REVENUES FOR CURRENT OPERATING EXPENDITURES

MICHIGAN

	TARGET PUPIL GRANT 1/		PERSONNEL UNIT FORMULA 1/	
DISTRICT TYPE	NEW COE INCLUDING FEDERAL EXPENDITURES	NEW COE BASED ON STATE-LOCAL EXPENDITURES ONLY	NEW COE INCLUDING FEDERAL EXPENDITURES	NEW COE BASED ON STATE-LOCAL EXPENDITURES ONLY
CENTRAL CITY	$969	$878	$847	$756
SUBURBAN	802	783	747	728
SMALLER CITIES	800	766	724	690
RURAL	795	759	730	694
TOTAL SAMPLE	$848	$801	$765	$719

1/ The target pupils include kindergarten students, Title I eligibles as a proxy for educationally disadvantaged, and secondary school students (grades 7-12). Per pupil expenditures for grades 1-6 were used as the base.

2. Impact on State Costs and Tax Structure.

Besides "equalizing" educational programs for all students within a state, full state funding is intended to eliminate the differences in tax burdens for residents of different districts. Whether the move results in a more "equitable" tax structure depends on how the state tax structure is changed to meet the new revenue requirements (as well as on one's definition of "equity"). The changes in the state's revenue raising mechanisms will have to be considerable in many of the states, as illustrated in Table III-25. States such as California and Michigan, which are currently providing a moderate portion of the total education budget, would have to triple their state education budgets. Even states with a high percentage of state funding, such as Delaware and Washington, will have to raise a substantial amount of new revenues.

However, a more realistic comparison is with the total funds now expended for education from combined state and local sources. When this comparison is made, the percent increase in state revenues required is much smaller. One possibility might be to retain the same state tax structure utilized for the current state share of education costs and use a state property tax to raise the new revenues, rather than rely on large rate increases in existing state taxes.

3. Statewide Salary Schedules.

The levels of program costs also illustrate an important issue to be faced in a transition to full state funding -- the statewide salary schedule. The use of the suburban average teacher salary as the cost of a teacher in a personnel unit formula results in a 44 percent increase in state-local expenditures in Delaware, which is already using

TABLE III-25

FULL STATE FUNDING PROGRAM COSTS (IN THOUSANDS)

TARGET PUPIL GRANTS	DELAWARE	WASHINGTON	CALIFORNIA	MICHIGAN	NEW YORK
TOTAL COST	$ 77,330	$518,842	$2,152,603	$838,914	$2,711,206
PERCENT INCREASE CURRENT STATE SHARE OF EDUCATION EXPENDITURES	149.0%	210.5%	292.9%	292.4%	243.1%
PERCENT INCREASE CURRENT STATE-LOCAL EDUCATION EXPENDITURES	122.4%	118.0%	112.2%	114.4%	110.0%
PERSONNEL UNIT FORMULA					
TOTAL COST	$ 91,197	$475,820	$2,324,300	$796,466	$1,965,700
PERCENT INCREASE CURRENT STATE SHARE OF EDUCATION EXPENDITURES	175.7%	193.0%	316.3%	278.8%	176.2%
PERCENT INCREASE CURRENT STATE-LOCAL EDUCATION EXPENDITURES	144.4%	108.2%	121.2%	109.0%	79.5%

a statewide salary schedule and a personnel unit formula. The increase here stems from three sources. First, with the present system allowing local supplementation of revenues, suburban districts' teacher salaries are high relative to the statewide salary schedule because of the local salary supplements paid. Second, the suburban districts have a much higher proportion of teachers with advanced degrees than other types of districts and thus more highly paid teachers. Finally, if one uses the staffing ratios developed by McLure and Pence, there is a reduction in pupil-teacher ratios. These ratios are somewhat lower than those used in Delaware's existing personnel unit formula. A state's costs would be less than shown in this analysis if some lower figure than the average suburban teachers' salary were used as the base for the state salary schedule. However, political pressures from teachers' organizations and other groups may be such that it would be difficult to use the statewide average salary payment as the base, unless "save harmless" clauses and other protective devices for higher paying districts are included.

The decline in revenue requirements of over 20 percent for New York State compared with present state-local expenditures for education under the personnel unit formula (see Table III-26) should be noted. This is due to two factors. First, the staffing ratios, as developed by McLure and Pence, are higher than the current pupil-teacher ratios in New York.[65/] Thus, moving to a personnel unit formula and utilizing the McLure and Pence ratios, would result in larger class size for this state. Second,

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[65/] However, as noted in Chapter II, pupil-teacher ratios are undoubtedly higher than the New York values indicate because of differences in definition of a classroom teacher. Despite this factor, however, there would still be a decline in revenue needs.

TABLE III-26

FULL STATE FUNDING
PUPIL-TEACHER RATIOS

PERSONNEL UNIT FORMULA

	DELAWARE		NEW YORK	
	ACTUAL RATIOS 1968-1969	PROJECTED RATIOS UNDER PERSONNEL UNIT FORMULA	ACTUAL RATIOS 1968-1969	PROJECTED RATIOS UNDER PERSONNEL UNIT FORMULA
CENTRAL CITY	20.7	18.7	17.2	19.1
SUBURBS	23.5	19.7	18.2	20.3
SMALLER CITIES	25.1	20.5	18.4	19.9
RURAL	24.8	18.8	18.7	21.5
TOTAL SAMPLE	23.8	19.4	17.7	19.6

the average teacher salary of suburban districts is lower than that of New York City. Because of the large proportion of total enrollment this district represents, the reduction in teacher salaries for New York City has a measurable impact on total costs for the state. Political pressures, however, may be in the direction of adopting pupil-teacher ratios and a salary schedule similar to that of New York City, implying that the costs estimated in this analysis for New York are considerably understated.

Summary of Distribution Alternatives

The main focus of Part II of this chapter has been on alternative formulas for distributing general purpose aid to public schools. Each section discusses the impact of a particular alternative on two forms of disparities -- differences in the per pupil dollars expended and differences in the local revenue effort among districts within a state. Although each alternative is designed to fulfill different objectives, this summary will focus on their impact on disparities in per pupil expenditures.

The extent of equalization achieved by each of the general purpose aid programs and by the functional aid program for instructional costs is shown in Table III-27.[66] A summary of the shifts in average state and local revenues by type of district that would occur through the application of the various alternatives is presented in Table III-28.[67] The values utilized for purposes of analysis are reasonable illustrations but they do not exhaust the possibilities. The basic alternatives could be funded at different levels. Also some of the alternatives could be considered in combination.

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[66] While the functional aid programs are categorical in nature, instructional costs are such an overwhelming proportion of the school budget that it is appropriate to include the program here.

[67] Michigan was chosen for this illustration because it was the only moderate aid state for which data for each alternative were available.

Full state funding alternatives which, of course, remove all variation due to differences in local effort and property wealth, reduce the disparities the most. The power equalization alternative, which eliminnates the influence of property wealth differences, appears initially as effective in reducing disparities as the full state funding alternatives. However, an important caveat must be appended to this finding. Expenditure levels under power equalization are still influenced by local choice regarding tax effort. Shifts in tax effort can be expected since the program involves large changes in the educational program for many districts. As can be seen in Tables III-27 and III-28, the average expenditure level would be substantially reduced, assuming no change in current tax rates. Thus, after the anticipated adjustments in local tax rates in response to those reductions, the extent of equalization under a power equalization plan might change dramatically.

Matching programs, with the exception of those based upon per pupil property wealth, increase the level of disparities. But matching based upon fiscal capacity measures related to income would concentrate assistance in districts with lower personal income by reducing some of the burden of the property tax. The impact of the several income related measures varies widely. The disparities increase only slightly under the per pupil income criterion; they more than double under the percentage of poor families criterion. The relative shifts in expenditure levels among districts are so large under the latter criterion that, coupled with the increased disparities, the use of this measure as a practical alternative is questionable.

Functional aid supporting instructional costs also results in increased disparities. This reflects the use of actual expenditures for this purpose as the basis for the aid level. The administration of a realistic formula for instructional costs would be so complex that implementation would be discouraged.

A summary of the costs of each alternative is presented in Table III-29. Matching programs will involve approximately an 11 percent increase in the resources devoted to education from state and local sources. The power equalizing alternative will result in a 20 percent reduction in the resource level, assuming no adjustments in the existing local tax effort. The full state funding alternative will require 11 to 12 percent more revenues compared to the present state and local revenues. However, the shift from state-local funding to state funding alone would represent more than 175 percent increase over present state contributions to education (assuming the personnel unit formula for full state funding is utilized).

TABLE III-27

EXTENT OF EQUALIZATION

CURRENT OPERATING EXPENDITURES PER PUPIL*

MICHIGAN

EXISTING		ALTERNATIVES								
		PARTIAL STATE FUNDING							FULL STATE FUNDING	
		FISCAL CAPACITY MEASURES [1]				FISCAL EFFORT[2]	FUNCTIONAL NEED[3]			
EXISTING EXPENDITURES PER PUPIL (1968-1969)		PER PUPIL PROPERTY	PER CAPITA INCOME	PER PUPIL INCOME	PERCENTAGE OF POOR FAMILIES	POWER EQUALIZING	INSTRUCTION COSTS		TARGET PUPIL FORMULA	PERSONNEL UNIT FORMULA
State Average	$700	$799	$799	$811	$732	$575	$953		$848	$765
Coefficient of Variation	.23	.19	.29	.26	.50	.15	.30		.15	.14

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*Current operating expenditures include federal revenues

[1] Programs in this category provide state matching funds for each dollar of local revenue in inverse proportion to its fiscal capacity.

[2] Values are for the constant guaranteed base (Case A) set at the 90th Percentile Level.

[3] State funds total district current instructional costs.

TABLE III-28

PER PUPIL NON-FEDERAL REVENUES BY TYPE OF DISTRICT

EXISTING & ALTERNATIVE GENERAL AID PROGRAMS

MICHIGAN

DISTRICT TYPE	EXISTING PROGRAM (1968-1969)			ALTERNATIVES													
				PARTIAL STATE FUNDING												FULL STATE FUNDING	
				FISCAL CAPACITY MEASURES[1]								FISCAL EFFORT[2]		FUNCTIONAL AID* INSTRUCTIONAL COSTS[3]		TARGET PUPILS	PERSONNEL UNIT FORMULA
				PER PUPIL PROPERTY*		PER CAPITA INCOME*		PER PUPIL INCOME*		PERCENTAGE OF POOR FAMILIES*		POWER EQUALIZING*					
	STATE	LOCAL	TOTAL	STATE	TOTAL	STATE	TOTAL	STATE	TOTAL	STATE	TOTAL	STATE	TOTAL	STATE	TOTAL	TOTAL	TOTAL
Central Cities	$278	$348	$626	$346	$695	$357	$706	$332	$680	$402	$751	$129	$478	$542	$ 890	$878	$756
Suburban Areas	281	437	718	401	838	335	772	407	844	155	592	177	615	578	1,015	783	728
Smaller Cities	262	431	693	388	820	420	851	435	866	382	814	123	554	526	957	766	690
Rural Areas	299	233	532	285	519	304	538	355	588	430	664	166	399	393	627	759	694
TOTAL SAMPLE	$276	$385	$661	$367	$753	$366	$747	$388	$773	$335	$720	$144	$530	$528	$ 908	$801	$719

*Local revenues remain constant under all partial state funding alternatives

[1] Programs in this category provide state matching funds for each dollar of local revenue in inverse proportion to its fiscal capacity.

[2] Values are for the constant guaranteed base (Case A) set at the 90th percentile level.

[3] State funds total district current instructional costs.

TABLE III-29

COSTS OF PROGRAMS: GENERAL AID

ALL SAMPLE DISTRICTS
MICHIGAN

(IN MILLIONS)

	State	Local	Total
EXISTING PROGRAM (1968-1969)	$286	$401	$687
ALTERNATIVES			
PARTIAL STATE FUNDING			
Matching Program			
Per Pupil Property	$382	$401	$783
Per Pupil Income	$394	$401	$795
Per Capita Income	$381	$401	$782
Percentage of Poor Families	$348	$401	$749
Power Equalizing	$148	$401	$549
Functional			
Instructional Costs	$549	$401	$950
FULL STATE FUNDING			
Target Pupil Grant	$839	--	$839
Personnel Unit Formula	$796	--	$796

CHAPTER IV

HAWAII

I. INTRODUCTION

The method of financing elementary and secondary education in the State of Hawaii is unlike that in any of the other 49 states. Hawaii has a fully state-funded school system which does not rely on local revenues. Since full state funding has been proposed as one of the alternatives to the present systems of financing education in many states, it is appropriate to give attention to how such a funding system operates in Hawaii.

Since Hawaii's system of financing is unique, it does not lend itself to the pattern of analysis applied to the other eight states included in this study. Thus, the analysis of Hawaii is presented here in a separate chapter.

This introduction provides some historic and organizational background of Hawaii's education system. Section II describes in detail the method of financing education. Section III analyzes, where data permit, the nature and the extent of the disparities in per pupil expenditures among the state's seven school administrative units; and it examines the tax burden by income class for the support of public education. Section IV is concerned with the extent to which Hawaii's centralized school system inhibits innovation, flexibility, or other benefits supposedly stemming from local district fiscal autonomy.

The State of Hawaii is comprised of four counties -- Hawaii, Kauai, Maui, and the City-County of Honolulu. Each of these counties has a county council which has the power to levy property taxes for the support of such non-education public services as police and fire protection, recreation, road maintenance, and sanitation. Until 1965, the counties were also using local revenues, including the property tax, to fund certain education expenditures, as will be described in greater detail in subsequent pages.

In the case of schools, the State of Hawaii can be viewed as a single fiscally dependent school district, with seven administratively decentralized units or districts. These districts have no fiscal powers whatsoever. Four of these districts are located in the City-County of Honolulu, on the Island of Oahu which, although the smallest in land area among the counties, includes over 80% of the total population in the state. The districts on the Island of Oahu include the Honolulu, Central, Leeward and Windward districts. The Honolulu district, which encompasses the city limits of Honolulu, is the largest district in the state. The number of pupils (in ADA) in 1968-69 was 47,674. The Central district, with an ADA of 29,052, includes most of the military bases and federally connected students. The Leeward district, with an ADA of 25,265, is heavily populated by the economically disadvantaged groups of the island's population. The Windward district, with an ADA of 24,818, is populated mainly by suburbanites and substantial numbers of military personnel, as well as the rural disadvantaged along the coast.[1/]

[1/] Demographic descriptions are derived primarily from Hawaii State Board of Education, The Tasks of Public Education in the State of Hawaii: The Perceptions of the People, (1970), and from interviews conducted between 1970 and 1971 for this study.

The entire island of Oahu on which the City-County of Honolulu exists can be characterized generally as urban-suburban, although portions of the Central, Leeward, and Windward districts are still rural-agricultural and in no way different from the communities comprising the other three districts. These districts -- Maui, Kauai, and Hawaii -- are located on the "outer-island" or "neighbor-island" counties and are coterminous with county boundaries. All three of these districts are rural-agricultural, primarily producers of sugar and pineapple. The district of Hawaii, with an ADA of 15,750, encompasses the island of Hawaii, the largest island in the state. Maui district, with an ADA of 10,250, covers the tri-islands (Maui, Molokai, and Lanai). Kauai district, with an ADA of 7,216, and covering the islands of Kauai and Niihau, is the smallest school district of the seven districts in the state and has the lowest per capita income of all the counties.

Hawaii's single centralized school system is administered by the State Department of Education, headed by an elected State Board.[2] The State Superintendent is appointed by the State Board. The seven administrative units or school districts[3] each have a district office staffed by a district superintendent who reports to the State Superintendent.

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[2] Up until 1964, the Board was appointed by the Governor. A public referendum that year changed the Board's status to that of an elected board. In 1970, an attempt to again change the status of the Board was defeated at the polls.

[3] Some form of regional units with regional superintendents has existed at least since 1841.

Historical factors are probably the principal reason why Hawaii has such a centralized education system. Under the Territorial Government, not only education, but most governmental functions, including agriculture, labor, health and welfare, were centralized. In the transition from territorial status to statehood, no significant changes were made in the structure of the Hawaiian government.[4]

With regard to education, a committee report to the Constitutional Convention stated that:

> "The concept of a single, statewide system of public schooling is so fundamentally sound, so widely acclaimed, and so proven in the light of Hawaiian history as to justify the inclusion of the principle in the state constitution of Hawaii."

II. FINANCING OF EDUCATION IN HAWAII

Background of Full State Funding. In 1968-69, the state share of non-federal education costs was 95.2%, the local share amounting to only 4.8%. The distribution of total education revenues for that year was

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[4] Graves, W. Brooke, Centralization of Government in Hawaii, Library of Congress Legislative Reference Service, 1962; State and Local Government Relationships in the State of Hawaii, report prepared for the State of Hawaii by the Public Administration Service, 1962; Kosaki, Mildred D., School Boards and Public Education, State of Hawaii Legislative Reference Bureau, Report No. 4, 1961; Kim, Millicent Y.H., Hawaii Constitutional Convention Studies, Article IX; Education (Public Education), Legislative Reference Bureau, 1968.

85.1% state, 4.3% local, and 10.6% federal.[5] By 1970-71, the local share had declined to 2.9%. As will be seen, the small amount of local revenues is primarily attributable to debt obligations incurred prior to the institution of full state funding.

However, as recently as 1965-66, the state share of total state-local revenues was less than 70%, while the counties were contributing slightly more than 30%.[6] At that time, state appropriations for education, made from the general fund (comprised largely of personal and corporate income taxes as well as sales and excise taxes), covered all instructional costs plus general administrative costs. The counties were responsible for non-instructional costs as follows:[7]

1. Current Expenses

    - Maintenance -- school building and grounds
    - Operation of School Plants
        - Janitor Salaries
        - Other Personal Services
        - Janitor Supplies
    - Pension and Retirement Contribution
    - Workmen's Unemployment Compensation
    - Transportation of Pupils

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[5] Percentages derived from data given in National Education Association, Estimates of School Statistics, 1969-70, Research Report 1969-R15. These percentages are based on total revenues and thus include revenues for capital outlay as well as current operations. In Hawaii, federal aid comes principally from the impacted areas aid program, far outweighing revenues from ESEA Title I. This is in contrast to the other states studied, where the Title I program is the dominant federal program.

[6] National Education Association, Rankings of the States, 1966, Research Report 1966-R1, p. 44. Eight other states, including Delaware and North Carolina, ranked ahead of Hawaii in the proportion of state revenues provided for total non-federal education support (including capital outlay) that year.

[7] Classifications according to State and Local Government Relationships in the State of Hawaii, report prepared for the State of Hawaii by the Public Administration Service, 1962.

2. Capital Outlay

   Buildings and Improvement
   Land
   Furniture and Equipment

3. Debt Service

   Interest
   Principal

These functions had been assigned to the counties under the Territorial Government, and the counties retained this responsibility in the transition from Territory to Statehood.[8]

Reliance on the counties to raise the revenues for these non-instructional costs resulted in tremendous inequalities in facilities and non-instructional services among the districts as well as an unequal share of the tax burden borne by residents of the various districts. The "neighbor islands" were particularly affected because of their limited financial resources, since property values are considerably lower in the rural counties than in the City-County of Honolulu.[9] Since the rural counties could not appropriate sufficient funds for school construction or maintenance, these counties would often appropriate only a portion of the funds needed, and then turn to the legislature for subsidies for construction. They still had to rely on their own resources for maintenance and repair, however, and many of their schools became terribly rundown.[10] Honolulu, on the other hand, with high property wealth, had much better facilities and maintenance. But to obtain these benefits, Honolulu had to impose higher tax rates since it could not turn to the legislature for the subsidies the other counties could obtain.[11]

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[8] This division of fiscal responsibility between state and counties had been the practice since 1931. Op.cit.supra.

[9] While all counties used the property tax to raise revenues for the county general fund, about half of their general fund revenues came from state grants-in-aid (sharing of the receipts of the state general excise tax). Only in the case of the City-County of Honolulu did receipts from the property tax substantially exceed the receipts from general excise tax sharing. Today, however, the state grants-in-aid program is relatively small, the principal source of county revenue being the property tax. Interview with Director of Hawaii State Department of Taxation.

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[10] Interviews with state legislators and school officials conducted during 1970 and 1971 for this study. The Select Committee of the Hawaii House of Representatives in the 1965 Legislative Session stated in a report advocating state assumption of the responsibility for expenditures previously borne by the county governments:

> "Due to appreciable differences in the financial position of the several counties, the school building maintenance and repair needs are well cared for on one island, poorly cared for on another and only fairly cared for on the third. In still another county, although funds are adequate, the county authorities have not seen fit to allocate enough for school maintenance purposes. Since inadequate maintenance and repair is wasteful of capital investments even to the extent of eventually necessitating replacement of existing structures, it would seem preferable that the responsibility for maintenance and repair also be vested in the Board of Education."

[11] This was in part due to legislative concern for the poverty of the rural counties, but also because, until reapportionment, the legislature was largely controlled by the rural counties.

In 1965, the Hawaii State legislature passed Act 97. This Act provided for state assumption of all education functions formerly provided by the county.[12] The Act, not surprisingly, was strongly supported by the rural counties. The arguments on behalf of the passage of this Act were based on equality of educational opportunity.[13] Legislators and others who supported the Act noted that education was a state function, as stipulated in the State Constitution,[14] and hence should not be delegated to the counties when the result was substantial inequality among areas of the state due to differences in wealth among the counties.[15]

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[12] The Act also provided for state takeover of other county functions, such as health, and the administration and operation of district courts. The Act provided for an exception as follows: "The counties shall not be relieved of their obligation of paying the interest and principal on bonds which have been issued for improvements." This accounts for the small percentage of local revenues still reported as being allocated for education; these funds are largely from the City-County of Honolulu which had undertaken considerably more construction prior to 1965 and hence had incurred more obligations than the other counties. Despite the fact that the state is now entirely responsible for construction, Honolulu has $50,000,000 in local bonds for school construction still outstanding.

[13] A report prepared for the State of Hawaii in 1962 recommended that administration and financial support for school construction and maintenance be centralized in the state government. The report stated that "this arrangement offers the best means for providing equal educational opportunity throughout the state. Further, it will concentrate responsibility in a single government, as opposed to the existing separation of responsibility between the state and the counties. Under such a system, the counties will be relieved of a significant financial burden." The report continues: "The argument for equalization of educational opportunity through state fiscal support for operating expenses applies with equal force in any consideration of responsibilities for the erection, operation, and maintenance of the physical facilities." The report pointed out that the Counties of Maui, Hawaii, and Kauai did not have sufficient resources to adequately provide for these functions. Similar views were expressed in interviews with Hawaii state legislators and other state and district officials, conducted during 1970 and 1971 for this study.

[14] "The State shall provide for the establishment, support and control of a statewide system of public schools...including physical facilities therefor." Constitution of the State of Hawaii, Article IX, Section 1.

Allocation of Resources. Hawaii distributes education funds primarily on the basis of a personnel classroom unit formula similar to that in effect in Delaware and North Carolina, the difference being that in Hawaii, localities cannot supplement state funds with local revenues.

The basic formula for the allocation of teachers is based on enrollment:

Kindergarten to Grade 3:	One teacher position for each classroom unit of 26 pupils.
Grades 4 to 6:	One teacher position for each classroom unit of 27 pupils.
Grades 7 to 12:	One teacher position for each classroom unit of 28 pupils.

Classroom units are smaller in the case of the physically and mentally handicapped. It is of interest to note that, unlike all other states which differentiate between costs for elementary grades and costs for secondary grades, Hawaii provides for a smaller class size in the early childhood grades, thus allocating more money to those students than to secondary students.

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[15] Property tax relief was not the stated reason for state assumption of the functions formerly provided by the counties. Moreover, interviews with officials in the finance departments of several of the counties indicated that property tax rates did not decrease after Act 97 was implemented. Instead, expenditures for other local functions supported by the county general fund (which includes property tax revenues), such as recreation, increased.

A committee of the district superintendents adjusts the formula to a limited extent for program needs, such as programs mandated by the state legislature or federal programs. In the case of rural schools with a small enrollment, where there might not be enough students at a particular grade level to meet the formula entitlement, adjustments in the formula are made to ensure at least a "minimum" program. However, the principal mode of allocation is based on enrollment and not on any measure of need.16/

16/The State Department of Education proposed a new resource allocation procedure which would consist of a "foundation" program -- a basic program provided for each school, with additional funds allocated on the basis of various need factors. See Hawaii State Department of Education, Master Plan for Public Education in Hawaii, Honolulu: 1969. Among the criteria proposed were the following:

1. Community Need -- as measured by per capita income, per pupil assessed valuation, percent AFDC, ethnic mix, language and cultural diversity.

2. Teacher Quality -- as measured by high turnover, percent probationary, average teacher experience, composite rate of professional development.

3. Student Needs -- as measured by test scores, number of merit scholars, drop-out rate, absenteeism, failure rate, percent handicapped.

This proposal has not been implemented, but planning and the collection of data for the development of such an allocation process are now underway in the State Department of Education.

Non-teaching positions are also allocated by formula. For example, the formula for custodial positions is based on enrollment, as is the formula for secretarial positions, while the formula for cafeteria workers is based on the number of lunches served.

Funds for textbooks, equipment, and supplies are also allocated to districts on the basis of enrollment. In 1970, the formula was $25 per pupil for the elementary grades, $28 per pupil for the intermediate grades, and $33 per pupil at the high school level.

Thus, by and large, an effort is made to distribute state education funds on an equal resource basis per child for instructional costs,17/ with the only differentiation being made for grade level rather than any other measure of need. This is true for some non-instructional costs as well. However, items such as transportation would not be provided on an equal basis per pupil. The federal government is looked to as the source of additional funds for the educationally disadvantaged.

III. DISPARITY ANALYSIS

Where data were available for 1968-69, and amenable to analysis in the same format as data from other states in this study (see Chapter II), a similar analysis was undertaken for the State of Hawaii. This section discusses the results of that analysis.

17/The method of resource allocation does not result in equal dollars per child, since the amount of funds allocated per teacher position depends upon the education and experience level of the particular teacher who fills that position.

A. Expenditure Differentials

In examining current operating expenditures for the State of Hawaii, it is found that differences among the districts in total per pupil spending do occur. The range in disparities, however, is considerably lower than in the other states in this study. Moreover, the distributional pattern in this state is the reverse of that found in other states: in Hawaii, the urban school districts have lower per pupil expenditures than the rural school districts.

In a further reversal of the typical pattern, the principal factor contributing to these disparities is the difference in non-instructional costs among the school districts, although instructional costs do have a slight impact on the disparities. Table IV-1 provides a more complete picture of the distribution by district of expenditures for various function.

1. Total Current Operating Expenditures

Total per pupil current operating expenditures in Hawaii averaged $601 statewide in 1968-69. In the urban districts,[18] the amount is $588,

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[18] The four districts in the City-County of Honolulu -- Honolulu, Central, Leeward, and Windward -- have been designated as "urban" school districts for purposes of comparison with the predominantly rural districts of Maui, Kauai, and Hawaii located on the outer islands. But at least some districts in the City-County of Honolulu have characteristics which make them more difficult to categorize than districts in the other eight states in this study. For example, Leeward includes the wealthy suburbs of Waipahu and Pearl City as well as the very rural area along the Waianae Coast. The Windward School District includes both Kailua, a community with a median family income of approximately $8,000 in 1966 and a population of over 50,000, and Waimanalo, a low income area (formerly a sugar plantation) with a population between 5,000 and 6,000. However, each of the four school districts includes a jurisdiction with 10,000 or more population -- corresponding to the study definition of smaller cities.

TABLE IV - 1

HAWAII - EXPENDITURES BY FUNCTION

	Honolulu	All Urban Districts	Balance of State (Rural Districts	Percent Urban Districts of Rural Districts	Statewide Average
Instructional					
Principals & Supervisors	$ 24	$ 23	$ 32	71.9%	$ 25
Teachers	377	346	371	93.3	350
Other Instructional Personnel	26	25	28	89.3	26
Other Instructional Expenditure -- Supplies, Textbooks	40	46	50	92.0	47
Total Instructional Expenditure	467	440	481	91.5	448
Non-Instructional					
Administration	13	10	27	37.0	14
Transportation	7	7	24	29.2	10
Plant Operation	29	26	35	74.3	28
Plant Maintenance	42	43	52	82.7	45
Other Non-Instructional	71	62	83	74.7	66
Cafeteria & Other Workers	54	48	68	70.6	52
Attendance & Health Services	17	14	15	93.3	14
Total Non-Instructional	162	148	221	67.0	163
COE*	$629	$588	$702	83.8%	$611

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*Excludes fixed costs.

significantly lower than expenditures of $702 per pupil in the three predominantly rural districts. However, when the Honolulu School District is viewed apart from the other three "urban" school districts, its $629 per pupil expenditures are considerably higher than the urban average.[19]

The range in expenditures among the three rural districts is relatively small, from $650 per pupil in Kauai to $725 per pupil in Hawaii.

The average per pupil expenditures of $611 (excluding fixed costs) in Hawaii are lower than those of any other state in this study except for North Carolina, which spends $532 per pupil (when teacher benefits paid by the state are excluded).

2. Instructional Expenditures

Total instructional expenditures for the state are $448 per pupil, considerably below the dollar amounts spent by other states included in this study, again with the exception of North Carolina. But considered as a percent of all current costs of education, instructional expenditures in Hawaii account for 73.3 percent of the total operating budget, somewhat above the average of other states in the sample.

Expenditures for instruction do not vary sharply between the urban districts and the outer islands. The lowest teacher expenditures, $313 per pupil, are in the Leeward District, while Honolulu ($377) and the rural district of Hawaii ($379) spend the most on teachers. Total instructional expenditures are highest in the rural district of Hawaii ($725).

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[19] The coefficient of variation is a relatively low .12.

Teachers account for 59.9 percent of all expenditures in Honolulu and 56.8 percent in all four urban districts, but only 52.8 percent in rural areas since total expenditures are higher in rural districts.

3. Non-Instructional Expenditures

Total non-instructional expenditures average $163 per pupil, which is practically identical to the average per pupil expenditures for non-instructional items in the other states analyzed. However, there are considerable intra-state differences: Leeward (one of the urban districts) spends only $135 per pupil for non-instructional items, while Hawaii (rural) spends $235. The major expenditure items are transportation, which range from $7 in Honolulu (urban) to $33 in Maui (rural); administration, ranging from $8 in the Central district (urban) to $32 in Kauai (rural)[20/] and plant operation, which costs $23 per pupil in Leeward but $58 in Hawaii. The substantially higher non-instructional expenditures for every function in the outlying districts are the primary factor in the $114 difference between urban and rural districts.

Fixed costs average $76 per pupil statewide (including public library employees), but data for this item cannot be allocated among the districts.

20/ Administrative costs are substantially higher in rural areas due partly to diseconomies of scale and the state salary schedule. Although one school district may have close to 40,000 students and another only 7,000, their superintendents each get the same salary under a centralized system. This is not true on the Mainland where rural superintendents are likely to be paid considerably below what their counterparts in the cities of the same state are paid.

B. Teacher Characteristics

Average years of experience for teachers as shown in Table IV-2, in the State of Hawaii, is about 7.3 years. There is a sharp difference in years of experience between Honolulu, 10.4 years, which is typical of central cities in the other states studied, and the balance of the state, where average experience is under 8 years, below the average of other states in this study. Leeward has the lowest average teacher experience -- 4.7 years. This is the major cause for the $60 difference in teacher expenditures between these two districts. Next to Honolulu, the island of Hawaii has the highest proportion of teachers with experience, 8.2 years.[21/]

With the exception of Honolulu, where 24.1 percent of the teachers have advanced degrees, the percentage of teachers holding such degrees is low. In Leeward, with the lowest number of experienced teachers, only 2.8 percent of the teachers have advanced degrees. There is a high correlation in this state between years of experience and advanced degrees.

Hawaii's 1968-69 salary schedule provided $4,834 for a B.A. with no experience while the maximum salary for a B.A. was $8,684. Teachers with advanced degrees start at $5,877 and may attain a maximum salary of $10,556. The starting salaries for a B.A. degree are lower in Hawaii than in any other state in this study. North Carolina, the next lowest, has an average starting salary for a B.A. of $5,518. This figure includes the

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[21/] The rural districts have always had a high teacher turnover rate as have the more rural parts of urban districts such as Leeward. Most teachers serve their probationary two years in the rural areas, and then attempt to transfer out to the cities. However, according to many school officials and legislators who were interviewed for this study, the problem would be much more acute if it weren't for equalization of teacher salaries through the statewide salary schedule.

TABLE IV - 2

HAWAII -- STUDENT AND TEACHER CHARACTERISTICS

	Honolulu	Urban Areas Per District	Balance of State Per District	Statewide Average
STUDENT CHARACTERISTICS				
Average ADA	47,647	31,696	11,072	22,856
Title I Participants	4,199	2,132	5,810	2,896
Reading Test Scores	58.0	55.1	55.7	55.3*
TEACHER CHARACTERISTICS				
% Teacher with Advanced Degrees	24.1	12.4	11.1	12.1
Average Years Experience of Teachers	10.4	7.2	7.7	7.3
Average Teacher Salary	$8,138	$7,721	$7,721	$7,721
Pupil-Teacher Ratios	21.6	22.4	20.8	22.0

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*Approximate.

local supplements to the state schedule.

Average teacher salaries in Hawaii during 1968-1969 were about $7,721, lower than in any other states studied with the exception of North Carolina, where the average for 1968-69 is $7,115. Hawaii's salaries for 1968-1969 appear especially low because the cost of living is much higher in Hawaii than in the other states in this study.[22] The highest average salaries, $8,138, are in Honolulu, due to the high average experience levels of teachers in that district compared to other districts. The lowest average teacher salaries are in Leeward -- $7,091, reflecting the lower experience levels and low percentage of advanced degrees in that district. Average salaries for the urban areas are approximately the same as in the rural areas, however.

The average pupil-teacher ratio in the State of Hawaii is 22.0, which does not differ sharply from that of other states. There is little variation in pupil-teacher ratios among the seven districts. However, the direction of this variation is a reversal from most states: urban areas have higher ratios (more pupils for each teacher) than rural areas. Three urban districts have the following ratios: Central, 24.0 to one; Leeward, 22.6 to one; and Honolulu, 21.6 to one. The outer rural islands with the lowest ratios are Maui, 21 pupils per teacher and Hawaii, 20.3 pupils per teacher. This appears to indicate a deliberate attempt to provide the rural districts with more teachers since total expenditures for teachers are also higher in these districts.

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[22] However, salaries were increased substantially in 1969-70, with the average salary increase being over 20 percent.

C. Student Characteristics

Hawaii does not participate in the racial/ethnic survey undertaken by the Department of Health, Education and Welfare, so that there are no available data on racial/ethnic pupil distribution. A study undertaken by the Hawaii State Board of Education[23] indicates that the total population in the three rural school districts is comprised largely of Japanese, Filipino, part-Hawaiian racial groups with only 16 percent of the population of those districts being Caucasian. In contrast, the City-County of Honolulu (comprised of the four urban districts) has a Caucasian population of 26 percent.

Students who are recipients of federal ESEA Title I funds are concentrated in the Honolulu district, where they comprise 8.8 percent of total ADA. The second highest Title I student concentration is on the island of Hawaii, where these students comprise 7.5 percent of the total. In the Windward district, 5.9 percent of the students are recipients of Title I aid.

District reading achievement scores are the highest in Honolulu and the lowest in the Leeward district (both urban districts -- although Leeward includes within its borders a large rural area with a disadvantaged population). However, there is essentially no difference in reading scores between urban and rural districts, and little variation among all districts. There is a positive correlation between instructional expenditures and reading scores,[24] but this relationship is heavily influenced by the large enrollment in the Honolulu school district, which has both high expenditures and high test scores.

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[23] Hawaii State Board of Education, The Tasks of Public Education in the State of Hawaii: the Perceptions of the People, 1970.

[24] v = .41.

Non-public school enrollment in Hawaii is above the national average, comprising 19.3 percent of the total pupil population. This non-public school enrollment is concentrated in Honolulu, where it constitutes 43.7 percent of all enrollment in that district. Of all non-public school students in the State of Hawaii, 68.6 percent are in Honolulu. In the other urban districts, non-public school enrollment ranges from 8.2 percent in the Central district to 11 percent in Windward. Non-public school enrollment in all four urban districts is 21.5 percent of the total enrollment. In the rural areas, non-public school enrollment ranges from 7.8 percent in Hawaii to 15.7 percent in Maui. Student characteristics are given in Table IV-2.

D. Per Capita and Per Pupil Income

Per capita and per pupil income are calculated for the County of Honolulu (the data do not permit a breakdown of its four urban districts) and for each of the three rural districts. The following table compares the figures for these two measures by county:

County	Per Capita Income	Per Pupil Income
Honolulu	$2,669	$10,482
Hawaii	2,147	8,154
Maui	2,183	9,967
Kauai	1,877	8,154
STATE AVERAGE	2,596	10,150

The State of Hawaii's average per capita income of $2,596 is about the same as in the states of Washington and Michigan, and considerably above that of New Hampshire and North Carolina.[25] Despite relatively high per capita income, however, and the highest cost of living of any area in the nation,[26] teacher salaries are among the lowest. The cost of living in Hawaii is higher than in states with comparable per capita income, implying a slightly lower standard of living than in states such as California. Per capita income follows the same pattern as per pupil income, with the County of Honolulu having the highest income and rural areas the lowest income regardless of which fiscal measure is used. This urban-rural relationship parallels other states examined in this study.

E. State Taxes for Education

As noted previously, Hawaii is the only state in the nation which depends exclusively on state and federal funds to support elementary and secondary education. The total burden on taxpayers for education is thus determined by the state tax structure. The state's general fund is derived primarily from three sources of revenue -- a progressive personal income tax, a corporate tax, and broad-based sales and exise taxes -- which include utilities, tobacco, and alcohol.

Approximately 45.1 percent of the state's general fund revenues are allocated for elementary and secondary education -- the highest percentage of any state studied.

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[25] Hawaii ranks 12th highest among the states in per capita income, according to the Department of Commerce.

[26] The annual budget for a family of four for Honolulu in 1967 is estimated at $10,902, compared to an urban national average of $9,076. This is the highest of any large city in the nation.

The burden of the overall state tax structure is essentially proportional. In urban areas, low income households earning between $2,000 and $2,999 pay 3.7 percent of their income for education. Moderate income households ($7,500 to $7,999) pay about 3.5 percent and the $15,000 and above household income group pays 3.9 percent.

In rural areas, low income households pay about the same proportion of their incomes for education as their counterparts in urban areas -- 3.7 percent. Moderate income households pay about 3.4 percent and the highest income group pays the largest percentage.

In comparison to other states, Hawaii has the highest average state taxes for education, 3.9 percent, compared to 2.5 percent in the State of Washington. It does not, however, have the highest total taxes. The two states with the highest total tax burden for education are New York, at 5.4 percent, and North Carolina, the state with the lowest per capita income in the study, at 4.4 percent.

IV. LOCAL AUTONOMY IN A CENTRALIZED SYSTEM

Arguments against full state funding have focused on the loss of local control that presumably would result from moving to such a system for financing education. Local control is said to be important in that it permits the adaptation of education programs to meet the changing needs of a particular community and allows and encourages experimentation and innovation in education.[27] In an effort to determine the effect of a fiscally centralized education system on the flexibility of district superintendents or of individual principals, an extensive series of interviews of state legislators, state education department officials, district superintendents and their staffs, principals, teachers, officials of teachers' organizations, PTA representatives, and private individuals was undertaken in Hawaii.

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[27] Chapter V discusses a 1967 study which indicates that the rate of adoption of innovative educational practices is quite high in the state of Hawaii when compared with other states.

Based on these interviews, the general conclusion is that district superintendents or school principals appear able to exercise some measure of autonomy. While the state maintains fiscal centrality, it appears to decentralize some authority in non-fiscal matters, and the trend seems to be toward an increase of this kind of decentralization. However, the state legislature takes an active role in education and has enacted several special educational programs for implementation throughout the school system.

The specific aspects of local autonomy looked at in this study are staffing -- the hiring and placement of teachers; budget; curriculum; and finally, the role of the legislature.

A. Staffing

As noted in previous sections, teacher positions are allocated to districts by a formula based largely on enrollment, not unlike the system in existence in Delaware and North Carolina.[28] There is some flexibility on the part of the district superintendent, however, in terms of how he allocates these positions among the schools within his district. Moreover, individual principals have some choice as to how to utilize the positions allocated to them. For example, a principal could decide to hire three part-time teachers of native languages instead of one full-time teacher. In fact, except in the case of positions to carry out specific programs mandated by the legislature, such as those for special education and vocational-technical training, the districts and schools can fill the slots assigned to them with whatever kinds of teachers they choose.

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[28] In Hawaii, the legislature sets a ceiling on the number of teacher positions, but leaves decisions as to the allocation formula to the State Department of Education. In contrast, in Delaware, the allocation formula is legislatively enacted.

This degree of autonomy exists even though the hiring and placement of teachers is a state level responsibility. District offices and individual principals are taking an increasingly active role in the process and exercise their prerogatives in various ways. In some cases, members of the district staff go to the Mainland to recruit teachers. Principals can select teachers from a district or a state pool based upon interviews, or they can provide a list of desired qualifications and get district help in seeking candidates with these specifications.

B. Budget

The state education budget is worked out to meet program needs, but the funds are then allotted on the basis of enrollment. Funds for teacher positions are allocated by the state to the districts on a classroom unit basis. Funds for instructional supplies, equipment and texts are allocated to districts and to schools primarily on a per pupil basis.

The budget process begins at the local level. The individual schools submit their budgets by program areas to the district office. The district superintendents prepare their budgets on the basis of the principals' submissions. These, in turn, are consolidated into the State Department of

Education budget, which is then incorporated into the governor's budget, and sent to the legislature.

Once funds are appropriated, the system works in reverse. The governor allocates funds to the state departments (including education); these are suballocated to the district; and the district superintendent allocates a lump sum to each principal, based on the principal's defined program approaches plus his previous year's expenditures.

When the principal receives his school's allocation, he can treat the total amount as a lump sum budget, and shift funds among various items as he sees fit. For instance, in the case of funds allotted for new texts, the principal might decide to forego their purchase for a year and put all of the funds designated for texts into audio-visual equipment. The principal also has the freedom to determine, within the limits of the total amount provided him, how much should be allocated to English, to industrial arts, and so forth.

The State Department of Education is trying to encourage districts to move away from allocating funds to schools on a pupil or classroom unit basis, and to base allocations on programs instead. But the state, as pointed out, gives each district a lump sum allocation, and it is up to the separate districts to decide how to allocate the funds to the individual schools.

District superintendents have discretion to hold in reserve a certain percentage of their total allotment and need not allocate all of their funds to the individual schools. Most districts keep about 5 percent of the total allotment aside for contingency purposes. Some districts reserve as much as 10 percent of their total allotment, others as low as one percent. (Teacher positions similarly can be held in reserve and need not all be allocated at the school level.)

C. Curriculum

Individual schools can deviate from the general course of study set out by the State Department of Education, and apparently they have. According to one legislator, a survey of the state in 1968 revealed that there were 300 pilot or innovative programs underway in the state's 216 schools.

The State Department of Education issues a textbook list from which texts are to be selected. No single textbook is required for a course, but a range of alternatives is provided -- generally six or eight recommendations for each course area.[29] It is possible to apply for a book not on the list, however.

State guidelines for courses of study apparently are fairly general. There are only a few state-mandated programs. A substantial number of principals interviewed indicated that there was no problem in initiating programs or in adapting programs to the needs of their community and school. The Department does require principals to justify why they want to use textbooks not on the recommended list or courses of study not within the prescribed course guidelines, but the principals do not feel that these are onerous requirements.

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[29] This is not unique to Hawaii or necessarily a function of its fiscally centralized system. Chapter V examines this aspect of control in ten states, finding that California, Kansas, Delaware, and North Carolina all exercise some state level control over local district textbook selection.

D. Role of the Legislature

There is close involvement of the legislature in education affairs in Hawaii. This is partly due to the fact that Hawaii is a sparsely populated state, so that its legislators tend to have close personal and political relationships with the people and their local problems; and it is partly due to the fact that this state legislature has always had an intense interest in education. A number of those interviewed did feel that the legislature was too involved in the education system, noting that educational programs often originated in the legislature rather than being developed by the Department of Education. One estimate, by a member of the Hawaii Senate Education Committee, was that 85 percent of the new educational programs were initiated in the legislature as opposed to the Department of Education. At the same time, many new programs were initiated neither at the level of the State Department nor the legislature, but at the district or, the more usual case, at the school level.

Curriculum requirements are not mandated by the legislature as in California and New York. The legislature has, however, become intensely involved in three or four particular programs. One is the Three-on-Two Program,[30] which sets up an "arrangement of three teachers for two classrooms" for grades K to 3, to provide the opportunity for team teaching and individualized instruction in an ungraded structure.[31] Teacher positions for this program are allocated on top of the regular allocation formula to each district. There is no district or local flexibility with these positions as there is with the regular teacher positions.

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[30] Others include the Hawaii English Project to revise the teaching of English in the early grades, and the Comprehensive School Alienation Program for potential dropouts.

The legislature's lump sum appropriation for the State Department of Education, described in connection with the budget, was initiated in 1966. Because the legislature places sufficient restraints and specifies the education program in some detail, however, it is a lump sum budget in name only. Yet, it does provide the State Department of Education with more flexibility than a line item budget would.

E. Advantages and Disadvantages of the System

The advantages and disadvantages of Hawaii's fiscally centralized system, as seen by its participants, are as follows:

1. Advantages

a. Communities which grow rapidly are not penalized for their additional building needs as compared with more stable communities.

b. New approaches such as an ungraded school or a new course of study can be initiated at the district or at the school level.

c. Rural superintendents and principals have access to new programs, curriculum specialists, research staff, in-service training and other aids on an equal basis with urban educators.

d. Federal resources can be concentrated at the state level on a few priority projects rather than being dissipated into many small projects that make only minor improvements, if any. There is thus a chance to develop a much more coherent spending approach and to insure that the project is of sufficient size, scope, and quality as to promise some results.

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[31] 1968 Hawaii State Legislature, Conference Report No. 3.

e. Poor, rural areas are not disadvantaged in terms of teachers, equipment, and facilities.

f. Local and district educators can focus more attention on education program rather than having to worry about bond issues and tax levy elections.

2. Disadvantages

a. Initiatives for new and innovative programs have to come primarily from the individual school level where there is inadequate staffing or time to develop improved approaches.

b. There are rigidities in new programs implemented by the state.

c. There are some complaints of difficulties in communication between line people and staff people.

d. An over-dependency by school staff and district staff on the State Department of Education tends to reduce the development of their own capabilities for shaping local school programs to the needs of their particular communities.

e. The strong role played by the legislature has resulted in a somewhat weak and politically oriented State Board and Department of Education.

In sum, the general feeling conveyed among almost all who were interviewed is that there is enough flexibility under the centralized system to insure that programs may be adapted to the needs of a particular community. The State Department of Education and the legislature set a broad framework for educational policy, and the seven district superintendents, each with his separate staff, have the authority and freedom to experiment and innovate within that broad framework. Whether these powers are exercised frequently or effectively is another question beyond the scope of this analysis of the framework.

It is difficult to draw conclusions about the applicability of the Hawaii system to other states. A brief study of Hawaii does not permit one to judge the potential impact of full state funding on, for instance, the State of California. An examination of the system as it operates in Hawaii reveals the importance of the historic setting -- a tradition of centralization in all aspects of government with local government generally not as significant a factor as in most other states. Also, because of Hawaii's small and largely rural population, it cannot be compared to states such as New York, Michigan or California. Hawaii's unique ethnic background and the intense interest in education further make it difficult to find parallels on the Mainland; these factors, leading to uniquely close political relationships, makes the State Department of Education more like a city school administration. Thus, the analogy in some respects is closer to a single large school district with decentralized regions than to a state with separate school districts. Many of the problems mentioned -- difficulty in communications with headquarters, and the delays in having to go through more than one agency -- are problems typically referred to in studies of big city school districts in many states.

If positive assertions about the applicability of Hawaii's system must be cautious and tentative, at least one may say that Hawaii's experience does not seem to support the fears and arguments that have long been cited in opposition to full state funding. What may be some limitations on district flexibility appear to be outweighed, at least in the view of many Hawaiians, by the fact that disparities in per pupil spending among school districts are diminished, resources being nearly equal or distributed to areas manifesting greater need -- i.e., the low income, rural areas.

CHAPTER V

LOCAL AUTONOMY

I. INTRODUCTION

A common assumption in studies of education finance is that increased state funding inevitably involves increased state control over local education.[1] This belief has often been expressed by academics, educators, legislators, and lay citizens in discussions concerning possible changes in present school finance systems. It is frequently used as a major argument to oppose greater state financial contributions to local school districts. This has been a potent debating point because local control over educational curriculum, personnel, budget, and a variety of school-related issues is widely regarded by Americans as an essential factor in maintaining excellence in education.

The proponents of local control assert that it stimulates and sustains the interest of the parents and the local community in the education of their children. Further, it permits and encourages the adaptation of educational programs to meet the changing needs of a particular community. Local control is also thought to be a necessary condition for experimentation and innovation in education. Increased state financial contributions to financially desperate local districts are supposed to signal the end of local control and the establishment of uniform, state-side regulations concerning education. It is important, therefore, to examine the validity of the axiom in American education. This was done by undertaking a brief review of eleven dimensions of possible state control over local education decisions in ten states.[2] The following dimensions (grouped into five major types) were examined:

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[1] For the past two decades, writers in the area of education finance have generally assumed that an increase in the proportion of state aid for education relative to local aid would bring about an increase in the degree of state control over education. See e.g., Burkhead, Public School Finance: Economics and Politics, Syracuse, 1964; Koerner, Who Controls American Education? Boston, 1968. Burke, Financing Public Schools in the United States, New York, 1951 and Holmstedt, "Fiscal Controls," in Problems and Issues in Public School Finance, Johns and Morphet, eds., New York, 1952, seem to indicate that, in theory, increasing levels of state funding need not necessarily mean an increase in state control. They felt, however, that in practice, high levels of state funding did correspond with a high degree of state control.

Type I. Curricular requirements
    1. Textbook Controls
    2. Course Requirements
Type II. Budgetary and taxing restrictions
    3. Budget Controls
    4. Tax Limitations
    5. Bonded Indebtedness
Type III. State regulation of federal programs
    6. Title I Regulations
Type IV. Regulations affecting personnel
    7. Salary Regulations

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[2] Except for this study, little empirical work has been done to demonstrate the existence of any relationship between level of state funding and the degree of state control over local school districts. One of the few such studies, based on 1950 data, examined eleven mid-western states and found no consistent pattern between the amount of support provided by the state and the degree of state-imposed controls. This work is limited, however, not only because data on which it is based is now more than twenty years old, but also because the researchers looked only at the number of controls rather than at their relative degree of restriction. John G. Fowlkes and George E. Watson, School Finance and Local Planning, Chicago, 1957.

8. Teacher Certification
9. Teacher Tenure
10. Collective Bargaining

Type V. Jurisdictional boundaries

11. District Formation, Annexation, and Consolidation

State laws and regulations concerning each of the dimensions were compared and scaled according to the degree of restriction (strong, moderate, or weak) they placed on local districts. Each dimension was weighted equally in the final computation of a state-wide "restriction score."[3/] The following ten states were included in the analysis because they represent different levels of state funding: California, Colorado, Delaware, Kansas, Michigan, New Hampshire, New York, North Carolina, South Dakota, and Washington. They were divided into high, moderate, and low categories, according to their percentage of state funding relative to

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[3/] Given the different concerns of local districts for control over curriculum, teachers, or financial arrangements, it was decided that giving more weight to one type of restriction over another would not accurately reflect the value various districts might place on relief from such controls. Instead, the weighting would represent the subjective judgments of the researchers. Moreover, when individual restrictions were weighted differentially, no significant differences in relative degree of restriction were found. The states remained in essentially the same rank order in terms of restrictions placed upon local district decision-making.

total state-local expenditures for education in the state.[4/]

The preliminary nature of this study did not permit evaluation of the actual implementation of the legislative and regulatory controls over local education decisions in the ten states. Nevertheless, several significant findings based on a review of the legislation and regulations in these states, emerge from the analysis:

1. State statutes and regulations sharply limit the degree of local board autonomy -- although this varies widely between states and within the eleven dimensions surveyed -- in the majority of states examined. [5/]

[4/]

STATES	STATE AID AS PROPORTION OF TOTAL STATE-LOCAL FUNDING
High State Aid	1969-70
North Carolina	79.5%
Delaware	76.4
Washington	62.5
Moderate State Aid	
New York	47.1
Michigan	46.9
California	36.9
Low State Aid	
Kansas	28.1
Colorado	27.1
South Dakota	15.3
New Hampshire	8.9

Source: State share of non-federal education revenues derived from data in National Education Association, Research Division, Estimates of School Statistics, 1970.

[5/] The authors of this report wish to emphasize the preliminary nature of this finding, which is based solely on the enactment of statutes and the formal adoption of regulations and not on their enforcement.

2. There is little direct relationship between the percentage of state aid provided and the degree of state restrictions on the operation of local school boards.

These findings challenge the belief that increased state funding inevitabl brings increased state controls. While state restrictions in some dimensions, such as budget controls, may increase as the state percentage of funding for local education increases, there is no uniform pattern which can be identified across the dimensions studied. Section II of this chapter presents an analysis of each dimension, providing examples of the range of varieties of restrictions within the ten-state sample.

In addition to this analysis of the laws and regulations affecting local autonomy, an attempt was made to discover possible relationships between innovation and percentage of state funding of education. This was done by examining data concerning the incidence of locally-adopted innovations in 7,237 high schools in 50 states. The resulting analysis, presented in Section III, suggests some alternative hypotheses to explain the degree of state restriction in states with varying percentages of state funding. These hypotheses are summarized in Section IV.

II. ANALYSIS OF STATE EDUCATION LAWS AND REGULATIONS IMPACTING ON LOCAL DISTRICTS

This section briefly examines each of the eleven aspects of state restrictions on the autonomy of local school boards selected for study. Sources of the state laws and regulations utilized in this study are listed at the end of this chapter.

Type I. Curricular Requirements

1. Textbook Controls

Each of the ten states studied delegates power to a statewide body, usually a state bord of education, to outline a course of study for the schools in the state. As part of this broad power, some states have established requirements for state selection or screening of textbooks used in classrooms. Delaware, North Carolina, California, and Kansas all exercise direct control over the choice of textbooks by local districts. Although there are variations across states, no consistent relationship between the percentage share of state funds for education and the existing laws or regulations limiting the flexibility of local school districts in their selection of textbooks could be discerned. For example, the two most restrictive states in terms of textbook requirements imposed at the state level are North Carolina, a high state aid state, and Kansas, a low state aid state.

2. Course Requirements

Another controversial area of possible state control involves specification of required courses or the teaching of certain subjects. All ten states have some mandatory courses, usually those on state and American history, health and, more recently, on alcohol and narcotics. These requirements are in addition to the usual requirements of English, mathematics, and science which are found at all levels of primary and secondary education. It is important to note, however, that these general course requirements exist without any observable relationship to the percentage of state funding of local education. New York's requirements in the area of curriculum are the most extensive of any of the states studied;[6]

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[6] For example, the New York Legislature requires that the subjects of highway safety, fire prevention, humane treatment of animals, alcoholism and narcotics abuse, patriotism and citizenship -- including the state and federal constitutions -- be taught to all students. The first eight grades must include courses in mathematics, reading, spelling, English, geography, U.S. history, history of New York State, civics, hygiene, physical education, and science. In accordance with regulations promulgated by the State Commissioner, under legislative authorization, the high school curriculum must have a minimum of four units of English, three units of social studies (including one year of American History), one unit of science which must be given in the ninth grade, and a half unit each of health and physical education.

the number of mandatory courses specified by the legislature is also quite high in California. (California is the only state of those studied that requires the establishment of a kindergarten program in every district with an elementary school or schools.) Yet both of these states provide a moderate level of state aid. Washington and Delaware, on the other hand, both high state aid states, have relatively few mandatory courses.

Type II. Budgetary and Taxing Restrictions

3. Budget Controls

As might be expected, since the issue becomes that of concern over how local units spend state money, there is a more direct relationship between the level of state aid and budget controls than was found in most of the other aspects examined. Nevertheless, this relationship is not totally consistent. Both Kansas and California, low and moderate aid states respectively, exercise a relatively high degree of state control over budgetary procedures.

State-imposed requirements in this area are far more diverse than in matters of curriculum. Among the factors examined were specification of the permissible ratio between the amounts in each of the major line items in the school district budget, total expenditure limitations, and budgetary controls retained by higher levels of government -- such as counties, which are arms of the state. Delaware, North Carolina (both high state aid states), California (a moderage state aid state), and Colorado and Kansas (low state aid states) appear to be the most restrictive in terms of local budgetary discretion.[7] New Hampshire and South Dakota are the least restrictive in this area.

An interesting aspect of state-imposed budget controls is the varying treatment by some states of school districts of different size. Washington places more restrictions on small school districts (under 10,000 population) than it does on larger ones, while New York imposes more restrictions on New York City than on any other school district in the state, the reverse of the Washington pattern. In the State of Washington, for example, the smaller school districts are required to submit their budgets to the intermediate (now county-level) school district superintendent and a budgetary review committee for review and approval. This committee can alter the local district budget as it sees fit.[8] In New York State, the law requires that with regard to cities of 1 million or over in population, if the requested budget is less than $4.9 million, the city shall appropriate that amount.

In sum, while there is some relationship between percent of funds provided by the state and the degree of budget controls imposed upon local boards, this relationship is not consistent and cannot be said to be directly attributable to higher levels of state support for education.

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[7] In Colorado, a local school board can transfer unencumbered funds from one function to another only "in event of a contingency caused by an act of God, any act of a public enemy, or some event which could not have been reasonably foreseen at the time of the adoption of the budget."

[8] Washington, as well as several other states, imposes other kinds of requirements on small school districts not imposed upon other districts in the state. For example, while the larger school districts are permitted to fill their own school board vacancies, in the case of third class districts in Washington (generally school districts without high schools), the intermediate superintendent fills any vacancies that occur on the local school district board.

4. Tax Limitations

State restraints on local district autonomy in the area of raising local revenues fall into two principal categories: (1) statutory maxima for local tax rates (either absolute or which can be overridden by the voters of the district) and (2) size of the majority vote required to override statutory tax rate limits. Local district voter approval of tax levies is required to some extent in all ten states.[9] In some cases, voter approval is necessary for any local levy (as in Delaware), but there is no restriction on the local tax rate. Other states set a maximum tax rate, which can be exceeded only upon approval by the local district voters. Finally, some states (such as Michigan and North Carolina) have a maximum tax limit which cannot be exceeded regardless of voter approval.

The State of New York varies in the extent of its restrictions on taxation depending upon the type of district. The state sets no limits on the tax rate for non-city school districts, the rate being left up to approval by a majority of district voters. For cities under 125,000, voter approval is required for a specified millage increase up to a maximum which cannot be exceeded regardless of voter approval. With regard to the six city school districts over 125,000, a maximum millage is also imposed, but the municipal authorities set the tax rate within this maximum without having to go to the voters at all.

There appears to be no discernable pattern relating the degree of tax limitations to levels of state school funding. In terms of absolute statutory maximums which cannot be overridden even with voter approval, the most restrictive states appear to be two moderate aid states, Michigan and New York (with the exception of its non-city school districts). Colorado, a low aid state, ranks just behind these two states. Although the school district electorate can eventually override the state maximum, any amount over the maximum must first be submitted for approval to a state tax commission.[10] The least restrictive states appear to be New Hampshire (low state aid) and Delaware (high state aid).

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[9] In New York State, cities over 125,000 are fiscally dependent, meaning the school budget is part of the municipal budget and is not voted upon by the citizens. Wilmington, Delaware is also a fiscally dependent school district as are 9 districts in New Hampshire.

With regard to the size of the vote required to override statutory maximums, while most of the states studied require only a simple majority, several states require a 60 to 75 percent majority. Two such states are low aid states (Kansas and South Dakota) and the third is a high aid state (Washington). Again, there appears to be no discernable pattern of control which could be related to the level of state funding.

5. Bonded Indebtedness

As in the case of other dimensions of state control examined, the range in debt limitations varies significantly across the ten states studied. In the high state aid states, the debt limitations range from 5 percent to 10 percent of assessed valuation and the requisite voter approval ranges from a simple majority to 60 percent; in the moderate aid states, the debt limitations range from 5 percent to 15 percent and the voter approval required ranges from a simple majority to 66 2/3 percent; and in the low aid states, the debt limitations range from 6 percent to

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[10] Colorado permits its local school districts to tax at a rate which will rasie no more than 5% over the revenues raised the previous year. The State Tax Commission must approve anything beyond that amount. If the Commission does not give its approval to exceed the maximum allowable rate, then the issue can be submitted to the voters of that district.

10 percent, and the required approval from a simple majority to 66 2/3 percent. Thus, no clear pattern between the level of state aid and the degree of limitations is discernable.

Type III. State Regulation of Federal Programs

6. Title I Regulations

A survey of regulations governing the use of Title I[11/] funds reveals significant variations among the ten states. All states are supposed to follow the U.S. Office of Education regulations but these regulations are sometimes augmented by state requirements. In all three high state aid states and in all of the low state aid states with the one exception of Kansas, federal regulations are the sole guidelines for approving Title I projects or are supplemented only very slightly by state regulations.

The most restrictive state regulations for the use of Title I funds are found in California,[12/] New York, and Michigan (the three moderate aid states in this study). All three states require concentration of funds in a limited number of districts and schools and an emphasis on elementary rather than secondary education.

There thus appears to be no consistent relationship between the percentage of state funding and the degree of state controls imposed on the use of Title I funds.

[11/] Title I of the Elementary and Secondary Education Act of 1965: financial assistance to local educational agencies for the education of children from low income families or from families who are welfare recipients.

[12/] California also restricts the use of other federal funds. For example, in the case of Title III money, the state specifies both the percentage which can be used for various types of projects, and the priority areas for such projects.

Type IV. Regulations Affecting Personnel

7. Salary Regulations

Regulations concerning the salaries of school employees are somewhat related to the proportion of state funding of education. Both Delaware and North Carolina, high aid states, have statewide salary schedules. However, local districts in these two states are allowed unlimited supplementation of these schedules through local revenues. While state salary schedules may tend to encourage the maintenance of ratios among various types and experience levels of personnel, thereby limiting the degree of local autonomy over salary questions, many districts in these two states do depart from the schedule, both in terms of absolute amount and in terms of the ratios between the various levels of education and experience.

In spite of these two cases, however, the relationship between the degree of restriction and the percentage of state aid is far from perfect. Washington, a high aid state, has no salary restrictions whatsoever, while both New York and California, moderate aid states, have a substantial number of regulations in this area. For example, New York State mandates a minimum salary level for all school districts and has established an elaborate set of ratios between the salaries paid to classroom teachers and those of various kinds of administrators. California also has a minimum salary level. On the other hand, Michigan, also a moderate aid state, has no salary restrictions. Thus, while it appears likely that some increase in state control over salary questions may occur with increased state proportions of aid, this is by no means inevitable.

tive in requiring that dismissal of even first-year probationary teachers must be for cause. In New York and Michigan, on the other hand, the local board may dismiss probationary teachers without cause.

10. Collective Bargaining

There appears to be little direct relationship between the percentage of state aid and the degree of local autonomy to regulate bargaining between school boards and school employee representatives. If anything, the low and moderate aid states, with some exceptions, appear to be more restrictive in this regard.

There are three levels of state restrictions regarding collective bargaining. The most restrictive is the statute which requires school boards or other public employers to bargain with public employee unions. This kind of statute provided exclusive representation rights to the majority representative of a unit of public employees.

The second type of statute is the so-called "meet and confer" statute, which requires local boards to consult with all representatives of public employees (not just the majority representative), but does not require binding negotiations.

The third situation is the totally unregulated situation -- that is, the state has no statute dealing with public employee labor relations.

Only one of the high aid states included in this study (Delaware) has the most restrictive type of bargaining arrangement -- i.e., the requirement that school boards bargain with public employee unions -- while three of the four low aid states have this requirement. Colorado, like North Carolina, has no regulations governing bargaining arrangements, yet these two states are at the extremes in terms of level of state funding. Cali-

8. Teacher Certification

There is a substantial degree of state control over the process of teacher certification in all of the states studied. With the exception of Delaware and New York, where statutes permit a state educational body to delegate a portion of its certification powers to local bodies, every state studied gives the state, usually the State Board of Education, exclusive power to grant certification. Even in Delaware and New York, the state still exercises the primary power. For example, while New York City can establish more stringent certification requirements than those imposed by the state, it cannot reduce state requirements.

More specifically, most of the states studied have created, either by statute or regulation, detailed educational requirements necessary for a prospective teacher to obtain certification, thereby limiting the power of local boards to employ teachers with different educational backgrounds. The interest of the state in maintaining uniform minimum standards for teaching personnel apparently takes precedence over the possible competing interest of local boards in experimenting with different types of teaching personnel. The lack of local autonomy in this respect does not vary systematically with the degree of state aid.

9. Teacher Tenure

An analysis of teacher tenure laws in the states studied reveals no consistent relationship between restrictions placed on local boards and the percentage of state aid. Thus North Carolina, where the state provides almost 80 percent of non-federal revenues for education, allows local boards more discretion than any other state in deciding whether to rehire teachers. Kansas and South Dakota, low aid states, are relatively restricfornia and Washington are the only two states in this study with a "meet and confer" type of statute. The extent of state regulation of local school district bargaining relationships, therefore, cannot be said to bear any consistent relationship to the percentage of state aid.

Type V. Jurisdictional Boundaries

11. District Formation, Annexation, and Consolidation

With the exception of New Hampshire, all the states studied impose a rather substantial degree of state control over processes leading to the formation of new school districts or changing the boundaries of existing districts. In Delaware and Kansas, state-supervised mandatory reorganization plans were carried out in the 1960's to consolidate districts. South Dakota also enacted some mandatory requirements for consolidation, although less extensive than those of the former two states. Local participation in district consolidation and reorganization decisions is severely limited in all states, although some states provide for a hearing upon petition of a majority of the voters in a school district with, in a few cases, the right to appeal from an adverse decision. In general, there appears to be a paramount state interest in the organization of local districts within states, regardless of the level of the state's contribution to the funding of education.

The previous pages have presented brief summaries of the variation in state controls imposed on local school districts among the ten states selected for this study. The analysis of the state laws and department of education regulations in the eleven areas examined is presented in Table V-I. "Restriction scores" were then derived by weighting these state laws and regulations according to whether they imposed strong, moderate, or weak re-

TABLE V-1

DEGREE OF STATE RESTRICTIONS ON LOCAL SCHOOL DISTRICTS

	I. Curricular Requirements		II. Budgetary and Taxing Restrictions			III. Federal Programs	IV. Regulations Affecting Personnel				V. Jurisdictional Boundaries
States	Textbook Selection	Mandatory Courses	Budget Expenditure Limitations	Tax Limitations	Bonded Indebtedness Limitations	Title I	Salary Regulations	Teacher Certification	Teacher Tenure	Collective Bargaining	District Formation and Consolidation
HIGH STATE AID											
North Carolina (79.5%)	Moderate	Moderate	Moderate	Weak	Moderate	Weak	Strong	Strong	Weak	Weak	Strong
Delaware (76.4%)	Moderate	Moderate	Strong	Weak	Moderate	Weak	Strong	Moderate	Weak	Strong	Strong
Washington (62.5%)	Weak	Moderate	Moderate	Moderate	Strong	Weak	Weak	Moderate	Weak	Moderate	Moderate
MODERATE STATE AID											
New York (47.1%)	Moderate	Strong	Strong	Strong	Strong	Moderate	Strong	Strong	Strong	Strong	Strong
Michigan (46.9%)	Weak	Weak	Weak	Strong	Moderate	Strong	Weak	Strong	Weak	Strong	Strong
California (36.9%)	Strong	Strong	Strong	Moderate	Strong	Strong	Strong	Moderate	Strong	Moderate	Strong
LOW STATE AID											
Kansas (28.1%)	Moderate	Moderate	Strong	Moderate	Moderate	Moderate	Weak	Strong	Moderate	Strong	Strong
Colorado (27.1%)	Weak	Moderate	Strong	Strong	Moderate	Weak	Weak	Moderate	Moderate	Weak	Strong
South Dakota (15.3%)	Weak	Moderate	Weak	Strong	Strong	Weak	Weak	Strong	Weak	Strong	Moderate
New Hampshire (8.9%)	Weak	Weak	Weak	Weak	Strong	Weak	Weak	Moderate	Moderate	Strong	Weak

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*Percentages are for 1969-70 and were derived from data in NEA, Research Division, Estimates of School Statistics, 1970 straints on local school districts. Table V-2 utilizes these restriction scores to illustrate the relative degree of local autonomy found in the ten states. As this table shows, there is little relationship between the percent of state aid and the autonomy of local school districts.[13]

TABLE V-2

PERCENT STATE AID COMPARED WITH STATE CONTROLS

State	% State Aid (1969-1970)*	Restriction Scores	Ranking (High State Controls	Ranking (High State Aid)
New York	47.1%	32	1	4
California	36.9%	30	2	6
Kansas	28.1%	25	3	7
Delaware	76.4%	23	4	2
Michigan	46.9%	22	5	5
Colorado	27.1%	21	6	8
South Dakota	15.3%	21	6	9
North Carolina	79.5%	20	7	1
Washington	62.5%	19	8	3
New Hampshire	8.9%	17	9	10

*State share of non-federal education revenues derived from data in National Education Association, Research Division, Estimates of School Statistics. State aid figures for 1969-70 were chosen for this analysis inasmuch as the state laws and regulations examined were largely those codified as of 1970.

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[13] Only a very slight positive correlation was found between percent state aid and restriction scores -- r = .06.

Interviews in the three high aid states were conducted to supplement this analysis. While the interviewing was not systematic, the general impression conveyed by the local school district officials interviewed was that the high percent of state funding did not affect the degree of autonomy permitted local school districts. A superintendent of a Delaware school district, who had previous experience in school districts in the states of Ohio (where the percentage of state aid was 33.1% in 1969-70) and Michigan, stated that from his perspective there was much more local autonomy vis-a-vis the state education department in Delaware than he had found in the other two states.

Some officials in Delaware and North Carolina did feel somewhat hampered by the state procedures or formulas for allocating personnel and would have preferred more freedom to shift positions among categories of personnel.

III. INNOVATION AND LOCAL AUTONOMY

Increased restrictions, as was shown in the previous section, do not necessarily follow higher percentages of state aid. But it still should be asked whether there are other important aspects of local autonomy which might be affected by greater state financial involvement in education. To help answer that question, data from a 1967 study[14/] of innovative educational practices adopted by local school districts were related to the analysis of state-imposed restrictions outlined in the preceding section.

That study by Cawelti reports the results of a survey of 7,237 accredited high schools in all 50 states and the District of Columbia. The survey

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[14/] Gordon Cawelti, "Innovative Practices in High Schools: Who Does What and Why - and How," Nations Schools, Vol. 79, No. 4, April 1967, pp. 56-89.

used a somewhat arbitrary list of 27 innovative practices, grouping these innovations into three categories: curriculum innovations (e.g., use of Chemical Bond Approach materials in teaching chemistry or use of the Earth Science Curriculum Project materials); technological innovations (e.g., language laboratories or programmed instruction); and organizational innovations (e.g., team teaching or the non-graded approach). Based on the responses to the survey, Cawelti gave each state an innovation score based on the number of innovations adopted by all reporting high schools in that state from the list of 27 innovative practices compiled by the researchers.

Table V-3 presents data from the Cawelti study for the ten states examined in Section II of this report for degree of state controls.

TABLE V-3

PERCENT STATE AID COMPARED WITH INNOVATION SCORES

State	% State Aid[15/] (1966-1967)	Innovation Score	Ranking (High Innovation)	Ranking (High State Aid)
New York	48.0%	8.5	1	5
Delaware	79.5%	7.9	2	1
Washington	62.5%	7.8	3	3
California	35.8%	7.8	3	6
Colorado	25.3%	6.9	4	8
Michigan	50.5%	6.7	5	4
New Hampshire	10.4%	6.5	6	10
North Carolina	74.8%	5.3	7	2
Kansas	33.5%	4.8	8	7
South Dakota	15.6%	3.4	9	9

Table V-3 shows that the adoption of innovative practices, far from

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[15/] State share of non-federal education revenues are derived from data in NEA, Research Division, Estimates of School Statistics, 1970. Data for 1966-67 were utilized for this analysis inasmuch as Cawelti's survey of innovative practices was undertaken in 1966.

being suppressed by a higher percentage of state funding, appears to parallel somewhat the level of state aid. North Carolina with high state aid and a low innovation score is the one major exception. The highest innovation scores are found in two moderate aid states (New York and California) and in two high aid states (Delaware and Washington).[16] It can be said, therefore, that innovation is not stifled by higher percentages of state funding, and indeed may be encouraged by it. This conclusion is reinforced by reference to Hawaii, where schools are operated with 100 percent state support. Hawaii's innovation score, according to the Cawelti study, is 7.5. Thus, it would rank 4th, just below California and Washington and well above Colorado among the sample states in this study.

IV. LOCAL CONTROL AND INCREASED EXPENDITURES PER PUPIL

In order to further understand the differences among the states in terms of innovation scores and degree of state controls, a fourth variable, the absolute dollar amount expended per pupil, was examined. Tables V-4 and V-4 rank the states by average expenditures per pupil and relate this factor to the percentage of state funding, restriction scores, and innovation scores.

Tables V-4(a) and (b) suggest that the extent of state controls is somewhat related to the absolute per pupil expenditure levels. New York has both the highest restriction score and the highest level of per pupil expenditures. In contrast, three low spending states, New Hampshire,

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[16] A weak positive correlation between high innovation scores and a high level of state funding was found -- r = .39, not significant at the five percent level.

South Dakota, and North Carolina, all have relatively low restriction scores. While these patterns are not entirely consistent, viz. the cases of Washington and Kansas, the conclusion from this analysis is that state controls over local school districts increase as the absolute dollar expenditure levels increase.[17]

TABLE V-4(a)

AVERAGE PER PUPIL EXPENDITURES COMPARED WITH STATE CONTROLS

State	Average Per Pupil Expenditures (1969-70) NEA Data)	Restriction Scores	Ranking (High State Controls)
New York	$1,250	32	1
Delaware	899	23	4
Michigan	842	22	5
Washington	777	19	8
California	744	30	2
Kansas	726	25	3
Colorado	719	21	6
New Hampshire	700	17	9
South Dakota	656	21	6
North Carolina	584	20	7

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[17] A positive correlation between higher expenditures and increased state controls was found, r = .67 at the five percent level of significance.

TABLE V-4(b)

RANKINGS: EXPENDITURES, CONTROLS, PERCENT STATE AID

State	High Per Pupil Expenditures	High Restrictions	Percent State Aid
New York	1	1	4
Delaware	2	4	2
Michigan	3	5	5
Washington	4	8	3
California	5	2	6
Kansas	6	3	7
Colorado	7	6	8
New Hampshire	8	9	10
South Dakota	9	6	9
North Carolina	10	7	1

TABLE V-5(a)

AVERAGE PER PUPIL EXPENDITURES COMPARED WITH INNOVATION SCORES

State	Average Per Pupil Expenditures (1966-67 NEA Data)	Innovation Scores	Ranking (High Innovation)
New York	$912	8.5	1
Delaware	629	7.9	2
California	61[illegible]	7.8	3
Michigan	583	6.7	5
Washington	581	7.8	3
Colorado	571	6.9	4
Kansas	533	4.8	8
New Hampshire	523	6.5	6
South Dakota	467	3.4	9
North Carolina	411	5.3	7

TABLE V-5(b)

RANKINGS: EXPENDITURES, INNOVATIONS, PERCENT STATE AID

State	High Per Pupil Expenditures	High Innovations	High Percent State Aid
New York	1	1	4
Delaware	2	2	2
California	3	3	5
Michigan	4	5	3
Washington	5	3	6
Colorado	6	4	7
Kansas	7	8	8
New Hampshire	8	6	10
South Dakota	9	9	9
North Carolina	10	7	1

The importance of absolute dollar expenditure levels is further demonstrated by Tables V-5(a) and (b). States with high average per pupil expenditures, such as New York, Delaware, and California, all have high innovation scores, while low spending states, including South Dakota, Kansas, and North Carolina, have low innovation scores. The incidence of innovation, therefore, appears to be a function of actual dollars spent.[18]

Together, Tables V-4 and V-5 suggest that the percentage of state funding relative to total non-federal education support is not a good predictor of the degree of local autonomy or the incidence of innovation. However, higher statewide average expenditures per pupil do lead to slightly greater state controls over local districts and to significant increases in the rate of adoption of innovative educational practices.

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[18] The correlation coefficient relating the rate of adoption of innovative educational practices to higher dollars per pupil is .72 at the two percent level of significance.

V. SUMMARY

The hypotheses reached in the analyses described in this chapter may be summarized as follows:

1. The extent of state controls over local district decision-making has no direct relationship to the percent of state funding.

2. With the exception of North Carolina, higher percentages of state funding appear to be somewhat more conducive to innovations.

3. The rate of adoption of innovative educational practices is generally higher in states which spend more per pupil in absolute dollars. This relationship is much stronger than that between rate of innovation and level of state funding.

4. The extent of state controls appears to be somewhat related to increased per pupil expenditures, with Washington being an exception.

In conclusion, the study suggests that increased state funding (1) does not lead to substantial state restrictions on local school district decision-making, and (2) does not stifle the initiative of local school boards to adopt innovative educational practices. The availability of a higher percentage of state aid, end even more importantly, higher total expenditures per pupil, seems to encourage the adoption of innovation while not seriously limiting local school district autonomy in the eleven areas examined in this study.

SOURCES: STATE LAWS AND REGULATIONS

California	Laws: State of California, Education Code (rev., 1969). Regulations: California Administrative Code (rev., 1969), Title 5.
Colorado	Laws: Colorado Revised Statutes 1963 (rev., 1969), Chapter 123. Regulations: none available.
Delaware	Laws: Delaware Code (rev., 1970), Title 14. Regulations: none available.
Kansas	Laws: Kansas Statutes Annotated (rev., 1970), Chapter 72. Regulations: none available.
Michigan	Laws: Compiled Laws of 1948, State of Michigan (rev., 1968). Regulations: Administrative Code of 1954, State of Michigan (rev., 1968).
New Hampshire	Laws: New Hampshire Revised Statutes Annotated (rev., 1969). Regulations: Miscellaneous regulations issued by the Department of Education, State of New Hampshire.
New York	Laws: McKinney's Consolidated Laws of New York, Annotated, Book 16 -- Education (rev., 1970). Regulations: Official Compilation of Codes, Rules and Regulations of the State of New York, Title 8: Rules of the Board of Regents and Regulations of the Commissioner of Education (rev., 1970).
North Carolina	Laws: General Statutes of North Carolina (rev., 1969), Chapter 115. Regulations: none available.

South Dakota	Laws: South Dakota Consolidated Laws (rev., 1970), Title 13. Regulations: Administrative Manual for South Dakota Schools (1970).
Washington	Laws: Revised Code of Washington (rev., 1969), Title 28A. Regulations: Rules and Regulations of the State Board of Education of Washington (rev., 1970).

CHAPTER VI

INTRA-DISTRICT RESOURCE ALLOCATION

I. INTRODUCTION

Previous chapters of this report document the considerable disparities in per pupil expenditures between school districts within states. As new distribution alternatives are being considered to meet this problem, it is important to understand their possible impact on schools within individual districts. Although inter-district disparities may be reduced through new finance programs, significant disparities may continue to exist between individual schools within districts. Many of the factors which contribute to inter-district disparities in per pupil spending -- such as differences in property values, tax rates, starting teachers' salaries, and salaries for teachers of equivalent education and experience -- are not present within a school district. Nevertheless, disparities in per pupil spending among schools within a single district do exist.

The purpose of this chapter is to examine existing resource allocation patterns within districts and the causes and consequences of the disparity patterns. Subsequent sections of this chapter examine various dimensions of intra-district allocations. Section II examines the distribution of total instructional expenditures per pupil by type of school (grouped according to racial composition, socio-economic status, or per capita income of school neighborhood). Section III examines the distribution of district discretionary fund expenditures.[1] Section IV describes the impact of compensatory funds, both state and federal, on overall expenditure patterns. Section V analyzes the impact of teacher differentials in education and experience and in pupil-teacher ratios on total expenditures. The final section draws some conclusions about the factors producing disparities in per pupil expenditures among schools within the same district and suggests some alternative approaches to the allocation of funds.

Districts examined. Data from seven districts in two states were examined for the year 1969-70, focusing primarily on differences in per pupil spending among elementary schools.[2] In selecting districts, an attempt was made to get a variety of urban districts with different characteristics. Thus the sample includes two large industrial cities with sizable black populations; a large city that is the commercial center for a largely agricultural region and contains a sizable Mexican-American population; a medium-sized industrial city; a middle income, white residential suburb; and two predominantly blue collar suburbs, one of which is racially mixed.

The two districts selected for study in California are Oakland and San Jose. Five Michigan districts were also selected, including Detroit and two of its suburbs, Livonia and Warren. Livonia is a white, middle income residential community. Warren is a blue-collar community, also all white, with its own industrial base. The other two districts in Michigan are Flint, a smaller city under the classification used in this report, and Beecher, a lower income, racially mixed, blue-collar suburb of Flint. Table VI-1 presents basic data on student and fiscal characteristics for the seven districts.

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[1] Defined as revenues raised locally plus state general aid which the district combines with its local revenues. These funds, as opposed to categorical funds, are discretionary in terms of district spending decisions.

[2] Comparable data for these analyses could not always be obtained. For example, in analyzing the expenditure distribution pattern, in some cases schools were grouped by percent minority enrollment, in some cases by per capita income, and in some cases by socio-economic status. As later sections will show, however, some very significant conclusions emerge and are actually strengthened by the fact that different methods of analysis produced similar results.

Some general findings. Although there are many differences among these seven communities in terms of student and fiscal characteristics, the resource distribution pattern in most of the districts was found to be similar. District discretionary funds are usually concentrated in the schools of higher income and low minority populations, while state and federal compensatory funds are directed to low income, high minority schools. District discretionary funds and compensatory monies, in some cases, were found to complement each other; that is, total expenditures for the lowest income, high minority schools and the highest income, white schools are almost equal. However, those schools in the middle ranges that do not qualify for compensatory funds, and which do not attract the more experienced, more educated, and thus the higher paid teachers, receive less dollars per pupil than the schools at either extreme. They fail to benefit from either of these two patterns of intra-district resource allocation: district discretionary funds to the wealthy and compensatory resources to the poor. To measure equalization in this context is further complicated by the differential distribution of kinds of resources. Even though rich and poor schools may receive equal dollars, these funds buy different types of teachers in terms of education and

TABLE VI-1*

	Central Cities			Smaller City	Suburbs		
	Detroit	Oakland	San Jose	Flint	Warren	Livonia	Beecher
Average Daily Attendance	273,507	63,343	36,147	43,759	25,725	33,021	6,349
% Minority Students	60.7%	69.1%	32.0%	38.4%	0.7%	0.7%	27.0%
% AFDC	44.0%	43.5%	20.8%	15.1%	1.8%	2.2%	N/A
Per Pupil Property Value	$33,616	$51,365	$47,475	$36,578	$33,792	$31,184	$12,200
Tax Rate for Schools Per $100 Market Value	$ 1.04	$ 1.37	$ 1.29	$ 1.42	$ 1.28	$ 1.45	$ 1.33
Per Capita Income (1966)	$ 2,551	N/A	N/A	$ 2,607	$ 2,936	$ 2,829	N/A
Percent Local School Revenues	52%	65%	65%	64%	65%	64%	52%
Percent State School Revenues	36%	25%	30%	31%	33%	35%	46%
Percent Federal School Revenues	12%	10%	5%	5%	2%	1%	2%

*Data for this table were drawn primarily from the 1968-69 data analyzed in Chapter II of this report.

experience levels.

This report makes no attempt to determine the relationship, if any, between various school inputs and educational output. However, since several studies have suggested that teacher characteristics have an effect on pupil performance,[3] this chapter examines the allocation of teachers with higher education and experience levels and the allocation of additional teachers in order to reduce pupil-teacher ratios, as well as the absolute dollars spent per pupil.[4]

II. DISPARITIES IN TOTAL PER PUPIL EXPENDITURES

Because of the general unavailability of data on a school-by-school basis for non-instructional expenditures, the analysis of per pupil expenditures in this chapter is by and large confined to instructional expenditures, primarily those for instructional staff salaries.[5] Thus the analysis is concentrated on the resources which are important to instruction and which are distributed at the individual school level: teachers.

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[3] See, e.g., Coleman, James et al, Equality of Educational Opportunity (U.S. Office of Education: 1966); Bowles and Levin, "More on Multicollinearity and the Effectiveness of Schools," Journal of Human Resources, Vol. 3, No. 3, 1968, p. 393; Guthrie, James et al, Schools and Inequality, (MIT Press: 1970); Hanushek, Eric, "The Production of Education, Teacher Quality, and Efficiency," Do Teachers Make a Difference? (U.S. Office of Education: 1970).

[4] One need not resolve the question of whether variations in expenditures per pupil among schools mean equivalent variations in the quality of education in order to draw policy-relevant conclusions. If variations in per pupil expenditures are not associated with variations in the quality of education, then if a district is spending more per pupil on instruction at some schools than at others and getting no increase in output for the increase in expenditures, it can at least be concluded that the schools are not being operated efficiently.

Based on the analysis of the seven districts included in this study, considerable variation in instructional expenditures per pupil exists among elementary schools within a single district. For example, the average expenditure per student in San Jose, when funds from all sources are included, is $536; the standard deviation is $144. Similarly, in the Oakland school district, the average per pupil instructional expenditure is $591, with a standard deviation of $124.[6]

In four of the districts -- Oakland, San Jose, Beecher and Flint -- schools with the highest proportion of minority or of low income students are spending the greatest amounts for total instruction. This is exemplified by the analysis of Oakland in **Figure** I. Other districts,

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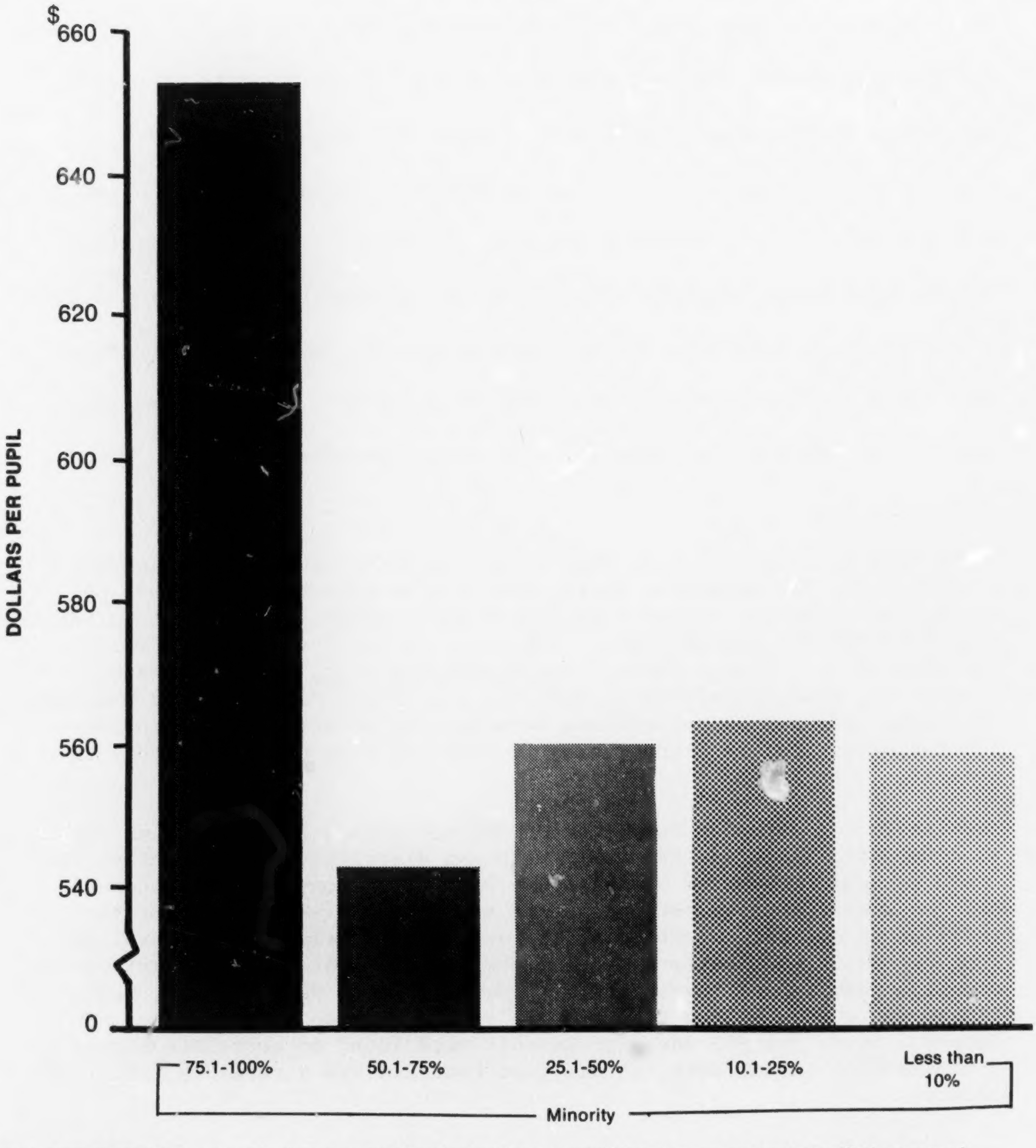
[5] Investigations and interviews in a number of districts indicated that there are little differences among schools in the allocation of instructional supplies and materials. In many cases, a strict per pupil expenditure calculation is used to insure district-wide equality. There are some differences, however. An intensive study of the Oakland school system indicated that extra supplies and materials such as teacher workbooks, slide projectors, and library books were provided to the middle class schools by PTAs and other parents' groups. The poorest schools, receiving compensatory monies, did not differ noticeably from the higher income schools in their amount of classroom supplies. The schools that were shortchanged were those that were not quite poor enough to be recipients of Title I money.

[6] Often there is great variation in per pupil expenditures among schools within the same group (that is, grouped according to percent minority or by income). In Oakland, greater variation was found among those schools with the highest proportion of minority students (the standard deviation being $152 per pupil) compared to the predominantly white schools (standard deviation of $66).

FIGURE 1

OAKLAND TOTAL PER PUPIL EXPENDITURES*
(by Race)



***TOTAL EXPENDITURES:** All expenditures on teachers for grades 1-6, certificated personnel and classified personnel, excluding special teachers (educationally handicapped and educable mentally retarded, but including mentally gifted minor).

however, spend more of their total funding from all sources on the predominantly white, high income schools, even when size of school is held constant.[7] Figure 2 , illustrating this phenomenon in Detroit, also applies to the district of Livonia. In Warren, however, while the lowest socio-economic status (SES)[8] schools receive the least funds, the highest SES schools receive the next smallest amount per pupil, with schools in the middle ranges receiving more than those at either extreme.

An interesting aspect of these expenditure patterns is that both in the case of districts spending the greatest amount in the high minority, low income schools compared with the white, middle class schools and those districts which have the reverse pattern, schools in the middle ranges have lower per pupil expenditures than those at either end of the income-race scale. Warren, as already noted, is an exception to this. San Jose

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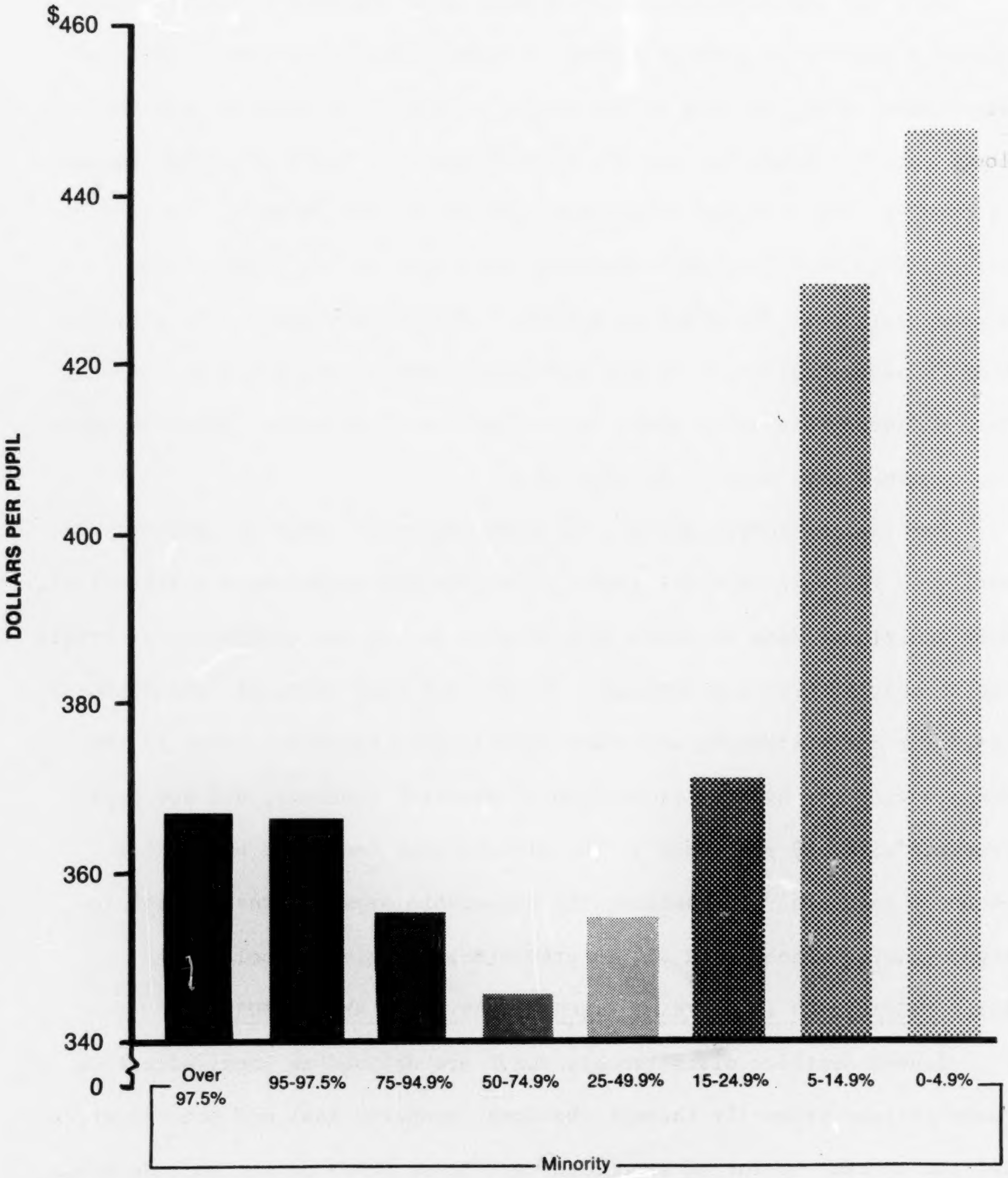
[7] The argument has been made that in cities which are becoming heavily minority, the few remaining white schools have higher expenditures primarily because their school capacity is underutilized compared to minority schools which are overutilized. See, e.g., O'Neill and Holen, "The Division of D.C. School Funds," The Washington Post, editorial page, October 15, 1970. Analyses in both the California districts and Michigan districts indicated a correlation between size of student body and per pupil expenditures -- expenditures increase as size of student body increases.

[8] While income data for Detroit were derived from a 1965 study, no such data were available for the other Michigan districts. Consequently, the socio-economic status of students was used as a proxy for low income. Data on school average socio-economic status (SES) -- measures of the level of income and education of the student's family -- were obtained from responses to a battery of test questions administered as part of the Michigan Educational Assessment Program. The test was designed, administered, and graded by the Educational Testing Service of Princeton, New Jersey. Since the SES data for Detroit were found to correlate highly with the 1965 income data, it was felt that SES was a reliable proxy for income.

FIGURE 2

DETROIT INSTRUCTIONAL STAFF EXPENDITURES*
(by Race)



*Per pupil expenditures from all sources on salaries of professionals (excluding administrators).

also deviates from the expenditure pattern just described. There, total expenditures increase in direct proportion to the increase in minority enrollment.

With but few exceptions, the highest paid teachers -- due to their advanced degrees or greater number of credits and their longer years of experience -- are located in the white, middle class schools, and the lower salaried teachers, who are younger and have fewer advanced degrees or credits, are assigned to minority and low income schools. In some districts, such as Flint, this imbalance is offset by the reduced pupil-teacher ratios in the minority schools. But in most cases, the introduction of additional teachers has had little impact on the teacher expenditure differentials among these two categories of schools. These factors are examined more closely in Section V.

For reasons noted earlier, the intra-district study is confined primarily to analysis of total instructional salary expenditure differentials. Some additional data on other expenditures in the two California districts led to some interesting findings. In the San Jose district, the highest costs for administrative and other certificated personnel occur in the schools with the highest proportion of minority students, $75 per pupil, compared with $49 per pupil in the schools with the least percent of minority students. In Oakland, the comparable expenditures are $66 in high minority schools and $54 in predominately white schools.

III. DISPARITIES IN DISTRICT DISCRETIONARY FUND EXPENDITURES

School district discretionary funds are defined as local education funds (raised primarily through the local property tax) and general state aid for current operating expenditures. These funds do not include state compensatory funds, other state categorical grants, and federal compensatory funds. The analysis of discretionary fund expenditures is based primarily on their distribution to individual schools for instructional expenditures, and thus it excludes such non-instructional expenditures as plant operation, maintenance, and non-teaching supplies.

A. District Discretionary Fund Expenditures To Schools Grouped According to Race

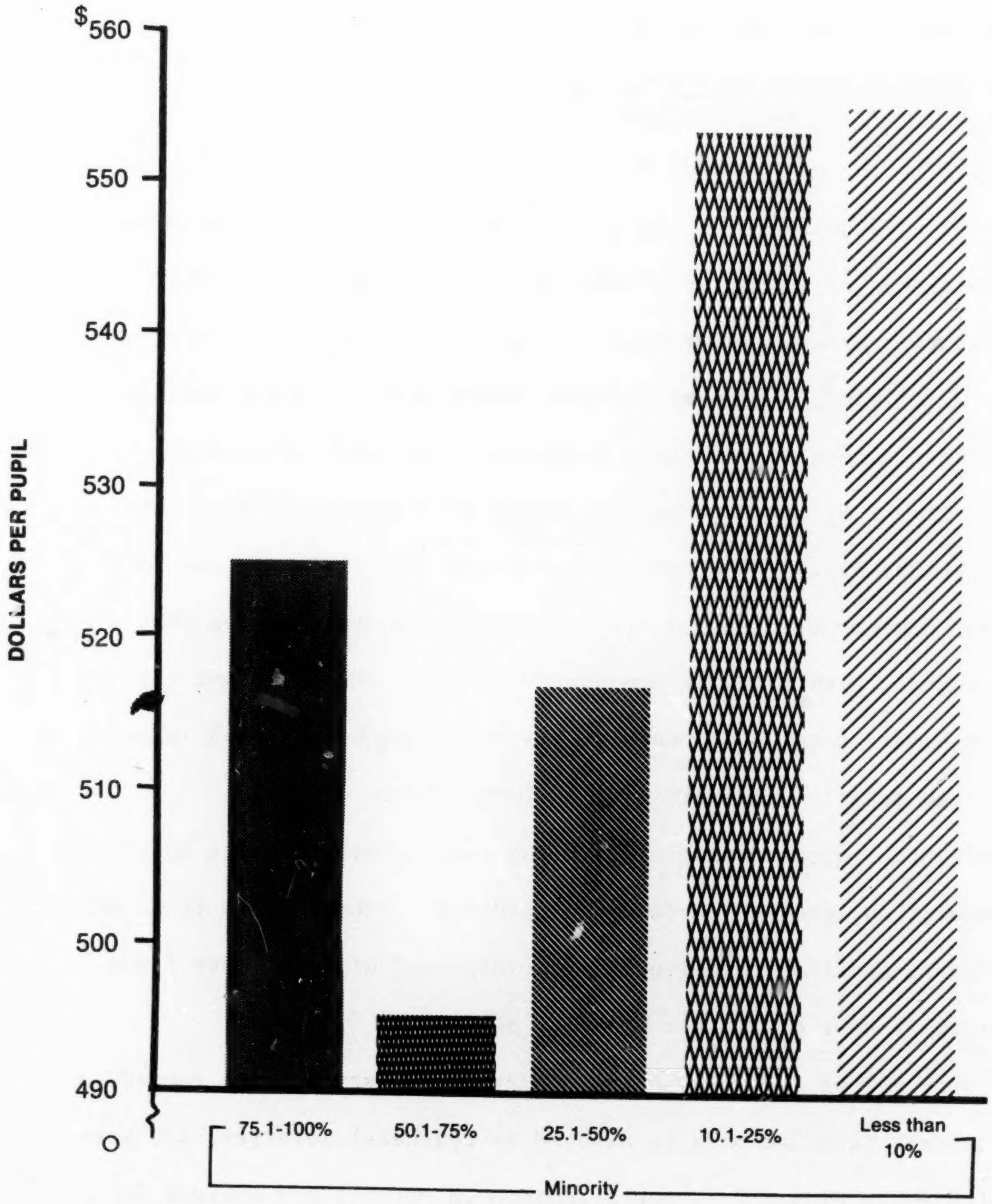
The distribution of district discretionary funds to schools in the Oakland district is depicted in Figure 3. The same pattern is found in Detroit, the second of the three central cities studied. The greatest amount of district discretionary funds is distributed to schools with the least black enrollment. The next greatest amount goes to those schools with the highest percentage of black students, those with 75 percent minority enrollment or more. Those receiving the least funds from this source are schools where the proportion of blacks is between 50 and 75 percent. The pattern of district discretionary fund expenditures thus favors (1) schools with a higher proportion of white students, and (2) schools with almost total black enrollments -- although to a much lesser extent than the schools which are predominantly white.

San Jose, the third central city in the sample, with a large Spanish-speaking population, presents a different picture. Schools with 10 to 50% Spanish-surname enrollment received greater district discretionary funds than either the lowest or highest minority schools.

Since over 80% of district discretionary fund instructional expenditures in the individual schools is devoted to teachers' salaries, the pattern illustrated in Figure 3 -- the situation in Detroit and Oakland --

FIGURE 3

OAKLAND
DISTRICT DISCRETIONARY FUND EXPENDITURES*



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*Includes all expenditures for teachers for grades 1-6, and certified personnel and classified personnel not paid for by funds from state or federal compensatory education programs. Excludes special teachers.

suggests one of two possible explanations to account for the higher expenditures found in the predominantly white and predominantly black schools: (1) these schools have more teachers at the higher end of the salary scale (because of higher education and/or experience levels) or (2) they have smaller pupil-teacher ratios. These two aspects are examined in succeeding sections of this chapter.

B. District Discretionary Fund Expenditures to Schools Grouped by Income or Socio-Economic Status

In order to determine whether there is any similarity between the distribution of resources to schools grouped according to their racial composition and schools grouped according to income, the distribution of district discretionary funds for instruction to schools ranked on the basis of income was examined in six districts.[9] Several different distribution patterns were found. These are shown in Figures 4 , 5 , and 6 . Three districts, Flint and the two all white Detroit suburbs of Livonia and Warren, provide lower per pupil expenditures to schools serving the pupils of the lowest income families than to any of the other categories of schools in their districts.[10] (This pattern, Type 1, is illustrated by Warren.) Two districts, both large cities (Oakland and Detroit), distribute resources so that the greatest amount of funds is allocated to the schools with pupils from the highest income families, the next largest amount to schools serving lowest income, and the schools ranking second in terms of income receive least. (This pattern, Type 2, is illustrated by Oakland.) A third pattern is found in Beecher, a suburb of Flint. In that district, the middle stratum is receiving more than either the higher or lower SES schools. The schools serving the affluent pupils receive the least. (Beecher thus represents the Type 3 pattern depicted in Figure 6.) All three types indicate considerable differences in per pupil expenditures among schools when grouped by per capita income, SES or the ESEA index. The distribution pattern of expenditures according to income found in Oakland and Detroit (Type 2 of Figure 5) is similar to the patterns found in those cities when expenditures in schools grouped according to racial composition were examined.

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[9] As noted in the previous footnote, income data for Detroit were taken from a 1965 study. Since income data were not available for the other districts in this study, other measures, such as socio-economic status of students (used for Michigan districts other than Detroit) and an eligibility index for ESEA Title I funds (derived for the school district of Oakland), were used as proxies for low income. No reasonable proxies could be developed for San Jose based on the data available, so this district has been excluded from this part of the analysis.

[10] This relationship is particularly evident when size of school is held constant.

C. The Reduction of Pupil-Teacher Ratios

For more than a decade, school district administrators have been aware that, without federal funds, the most disadvantaged schools had the lowest per pupil expenditures.[11/] In order to improve the education of pupils in low income and high minority schools, there have been some efforts to reduce class size through the assignment of more teachers to these schools. While, increases in the personnel available in low income, high minority

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[11/] See Sexton, Patricia Cayo, Education and Income: Inequalities in Our Public Schools (New York: The Viking Press, 1961).

FIGURE 5-1

TYPE (1)
DISTRICT DISCRETIONARY FUND EXPENDITURES
WARREN
(by SES)

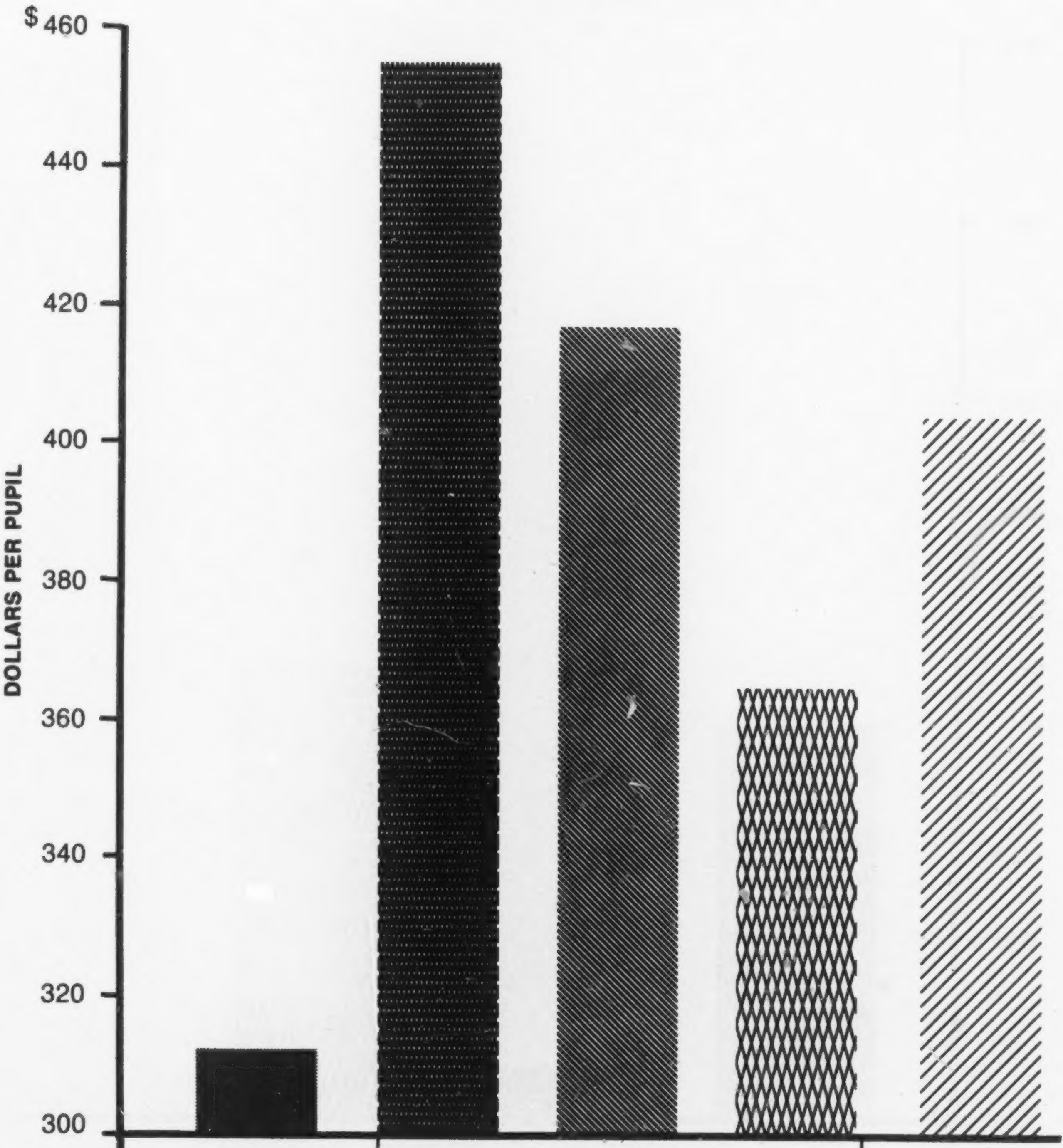
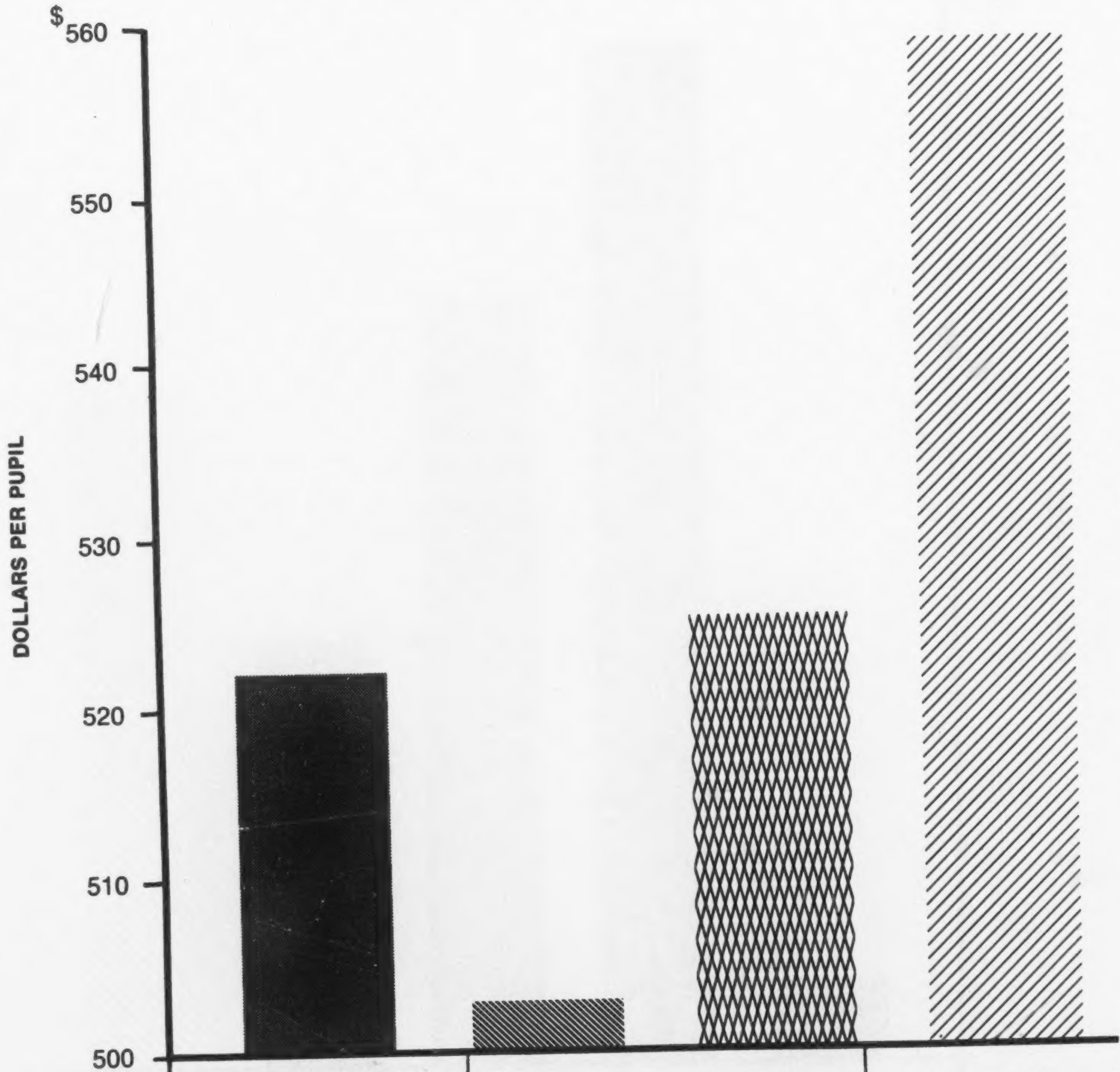


FIGURE 5

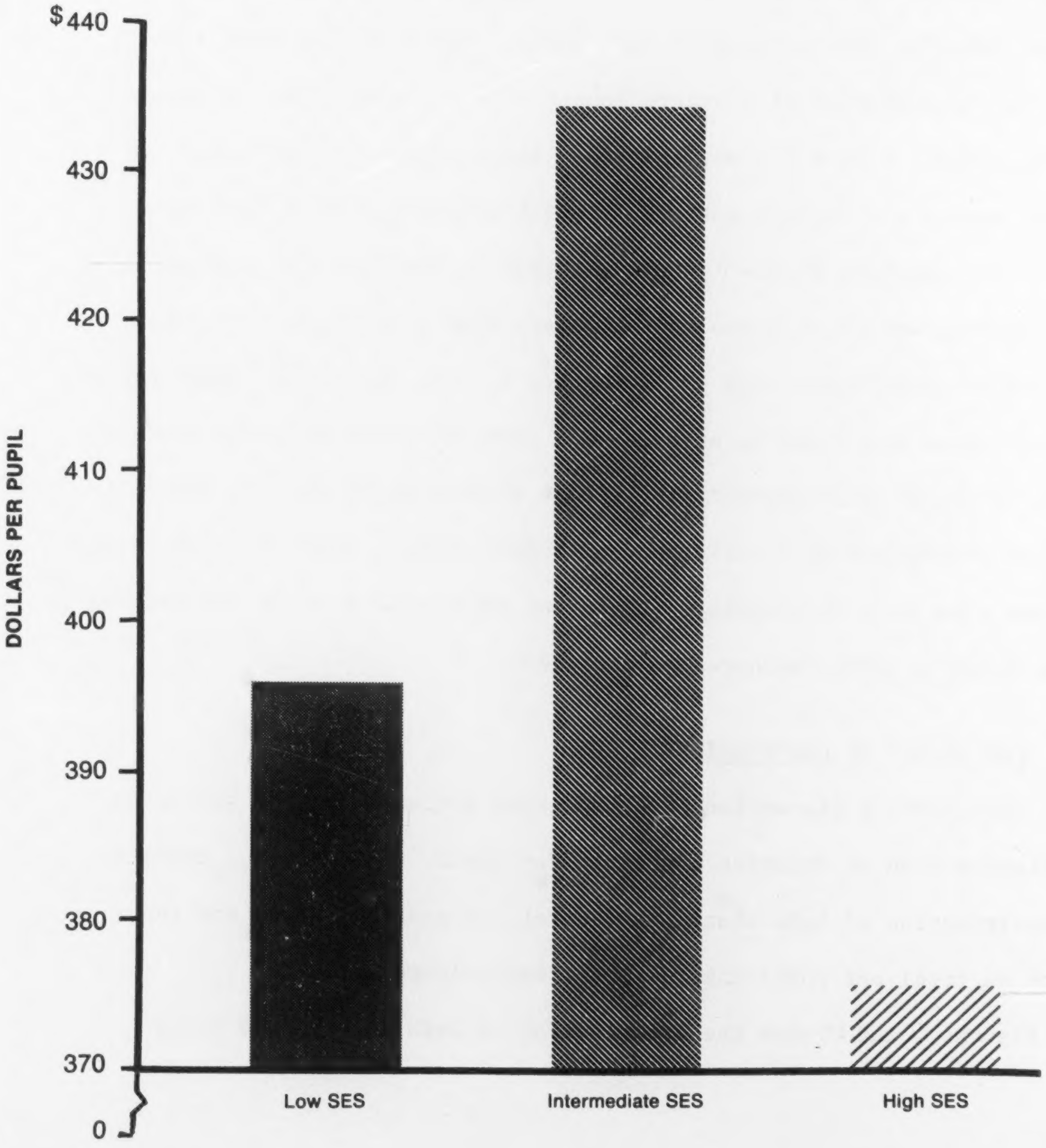
TYPE (2)
DISTRICT DISCRETIONARY FUND EXPENDITURES
OAKLAND
(by ESEA index*)



*This index was derived by giving the percent of students who were AFDC recipients a weight of 60, the percent of bilingual students a weight of 10, the percent below "quartile one" on achievement tests a weight of 15, and infant death per 100 live births a weight of 5.

FIGURE 6

TYPE (3)
DISTRICT DISCRETIONARY FUND EXPENDITURES
BEECHER
(by SES)



schools generally are brought about through the use of federal compensatory funds, some district administrators also used their district discretionary resources for this purpose.

Figures 7 and 8 show the distribution of pupil-teacher ratios by schools grouped according to race, excluding those teachers funded through state or federal compensatory funds. These figures thus illustrate the distribution of teachers funded solely out of district discretionary funds. Figure 7 shows that the lowest pupil-teacher ratios in Oakland are in the schools with the highest proportion of minority students. In contrast, Figure 8 indicates that in San Jose the predominantly white schools and those schools with a very high proportion of minority have almost identically high pupil-teacher ratios, while the lowest pupil-teacher ratios are found in schools with from 10 to 50% minority students. Again, it should be emphasized that these figures apply only to teachers paid for solely out of district discretionary funds. Pupil-teacher ratios decrease even more in minority, low income schools when state and federal compensatory program teachers are included.

IV. THE IMPACT OF COMPENSATORY FUNDS

The previous discussion of expenditure patterns focused solely on the distribution of district discretionary funds. This section examines the distribution of both state and federal compensatory funds and their impact on total per pupil instructional expenditures.

Figures 9 and 10 show the distribution of both federal and state

FIGURE 7

OAKLAND PUPIL/TEACHER RATIOS
(by Race)

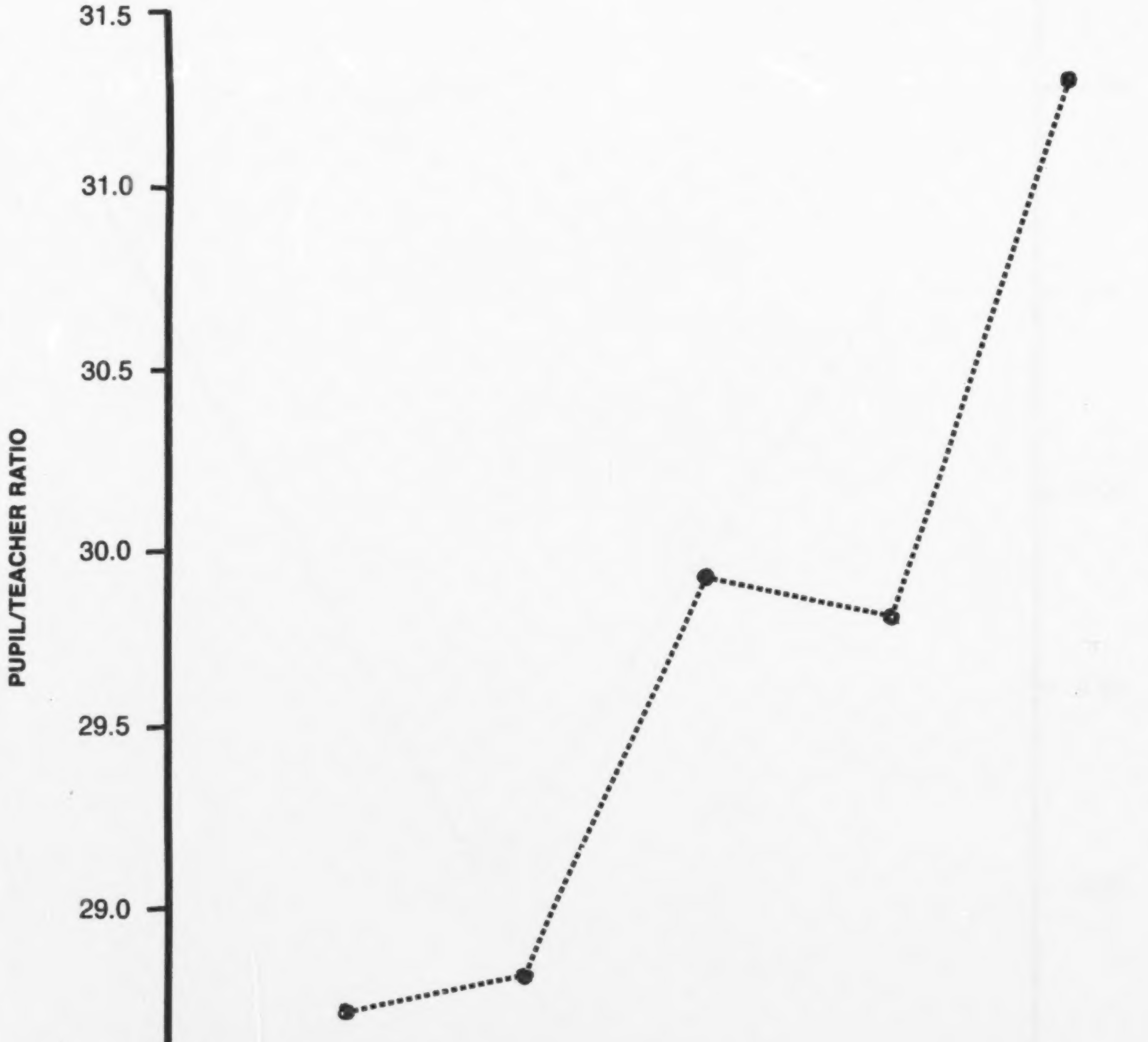


FIGURE 8

SAN JOSE PUPIL/TEACHER RATIOS
(by Race)

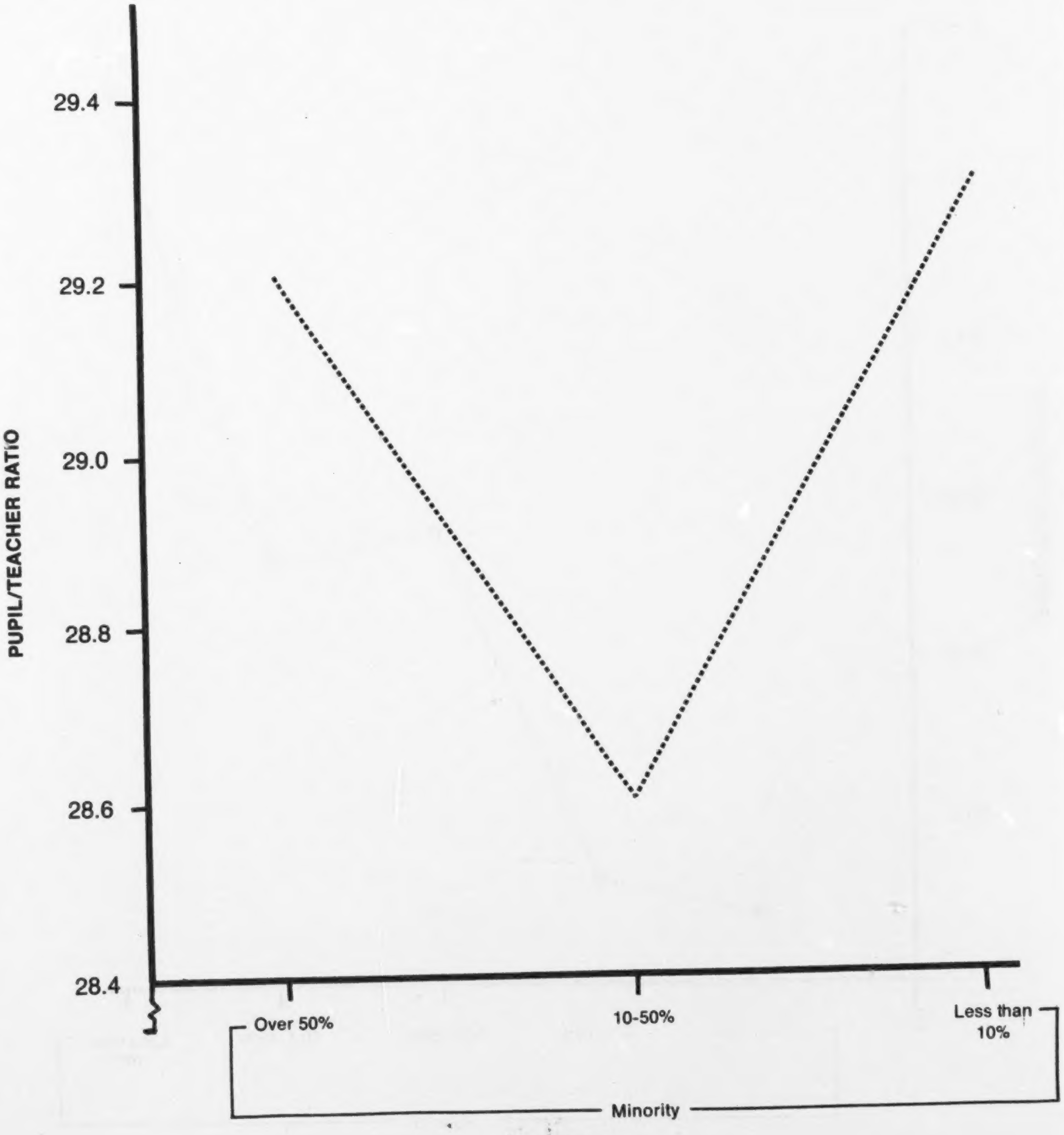


FIGURE 9

DETROIT TITLE I EXPENDITURES PER PUPIL
(by Race)

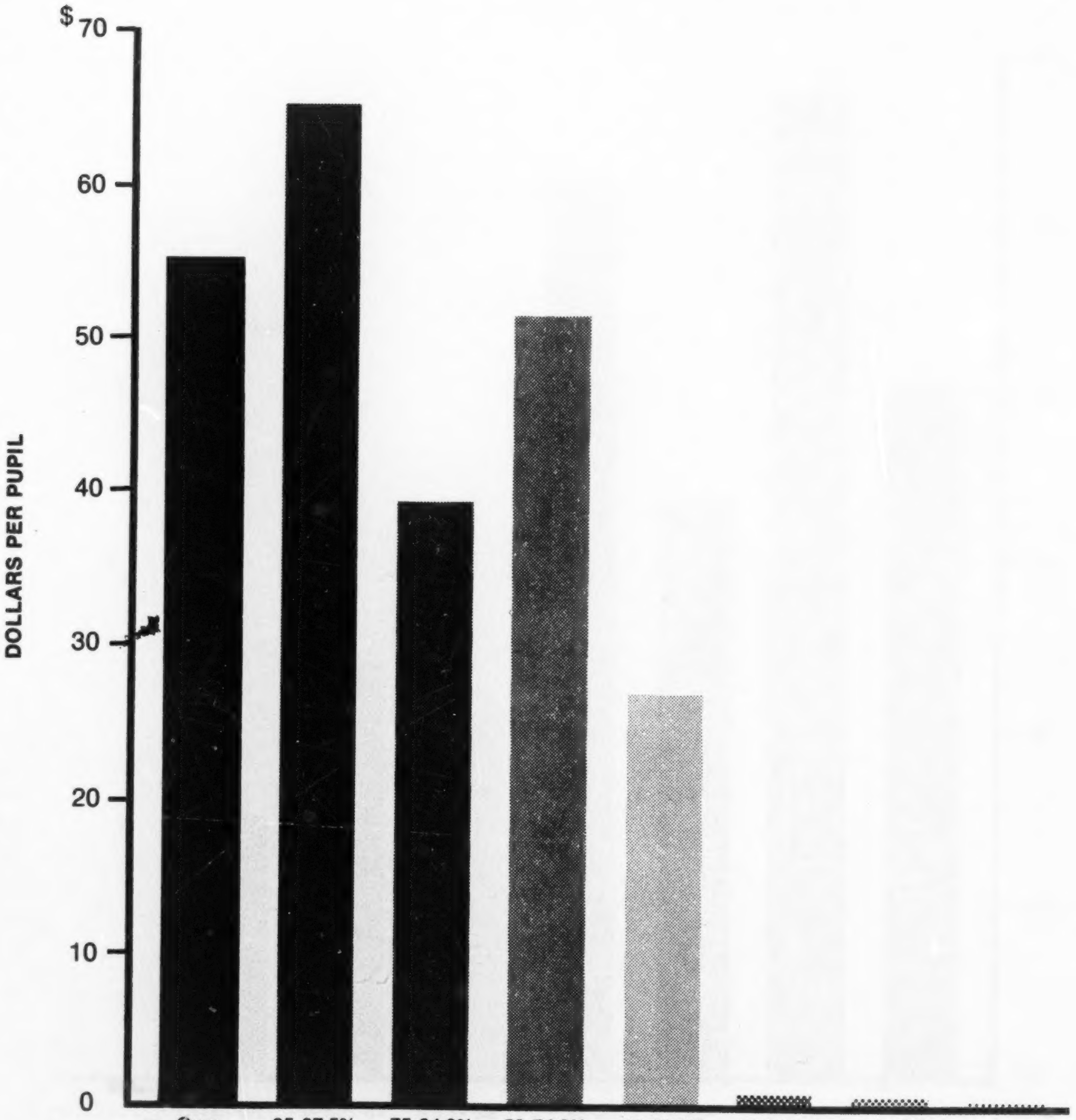
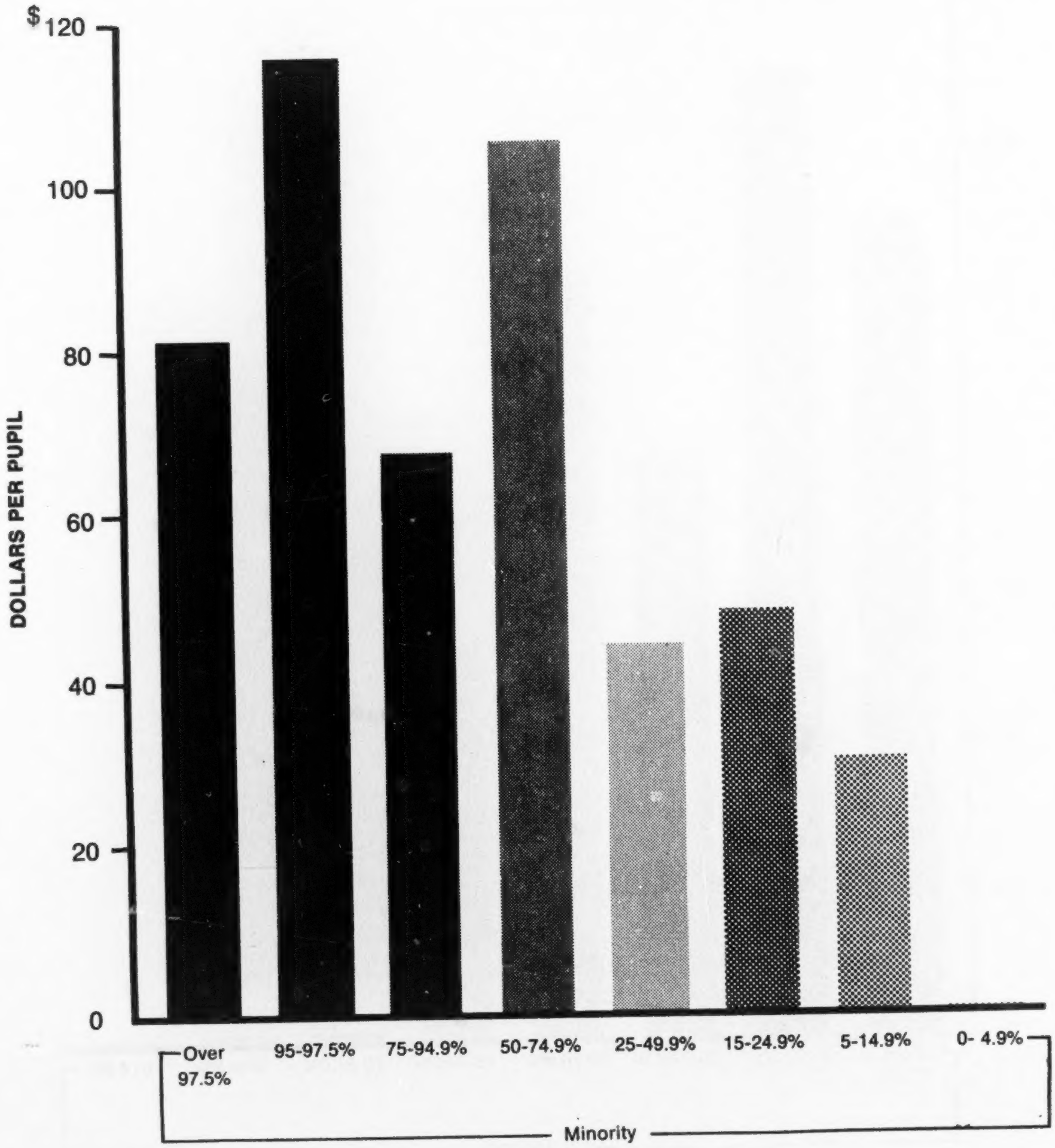


FIGURE 10

DETROIT

SECTION 3 EXPENDITURES PER PUPIL*
(by Race)



* Section 3 is the state compensatory program

compensatory programs to schools in Detroit, grouped according to race.[12] As the figures demonstrate, state and federal compensatory resources are allocated in essentially the same manner: the poor, high minority schools receive the majority of compensatory aid. The same relationships were found in the other two racially mixed districts in Michigan (Flint and Beecher), and in the two California school districts. This analysis shows that in 1969-70, in the districts included in this study, most compensatory resources were being concentrated in schools with disadvantaged populations and were not being used as general district-wide revenue.

The impact of these compensatory funds is to reduce disparities in total per pupil expenditures among schools within the same districts. Whereas district discretionary fund expenditures favor schools with wealthier, white enrollments, compensatory funds result in substantial increases in the resources available to poor, high minority schools. In the case of Oakland, as shown in Table VI-2 and Figure VI-2, state and federal compensatory funds actually bring the most disadvantaged schools to a level of expenditure well above that of the predominantly

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[12] These figures show the distribution of federal Title I of the Elementary and Secondary Education Act and of Michigan Section 3 Aid. Section 3 Aid is a state aid program which provides compensatory education funds to districts for "culturally, economically and educationally deprived" children. Its purpose is similar to that of Title I. Funding is based upon a school's (statewide) percentile score on achievement tests, or upon a combination of its score on achievement and socio-economic status tests. Points are awarded in inverse relationship to the percentile score. Schools with the highest number of points under this scheme are funded first, at the rate of $250 per student. If sufficient funds have not been appropriated, schools with fewer points may get no funds at all. In 1970-71, the state appropriated $17,500,000 for the program.

TABLE VI-2

OAKLAND EXPENDITURES PER PUPIL
(Schools Grouped According to Racial Composition)

Schools Grouped by Percent Black	Discretionary Fund Expenditures[1]	Federal Compensatory Expenditures[2]	State Compensatory Expenditures	Total Expenditures[3]
75.1% - 100%	$525	$101	$ 27	$653
50.1% - 75%	495	14	34	543
25.1% - 50%	517	35	7	560
10.1% - 25%	553	10	0	563
Less than 10%	555	0	4	559

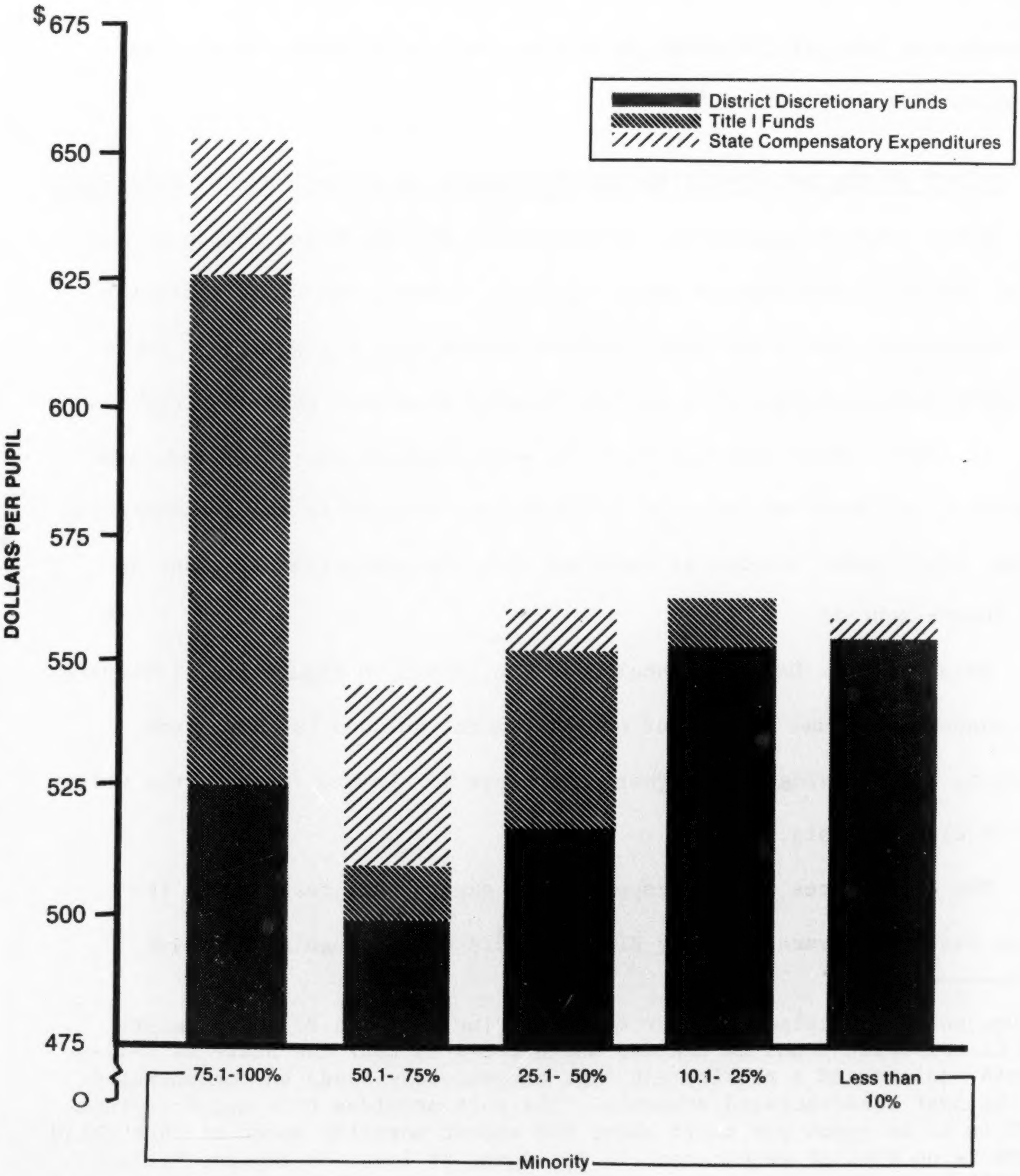
[1] Discretionary Fund Expenditures: All expenditures on teachers for grades 1-6, certificated personnel and classified personnel not paid for by funds from state or federal compensatory education programs, excluding special teachers.

[2] Federal Compensatory Expenditures: Expenditures for teachers, other certificated personnel, and classified personnel funded by ESEA plus Teacher Corps Funds.

[3] Total Expenditures: All expenditures on teachers for grades 1-6, certificated personnel and classified personnel, excluding special teachers (educationally handicapped and educable mentally retarded, but including mentally gifted).

FIGURE VI-2

OAKLAND EXPENDITURES PER PUPIL
(by Race)



white schools. Thus, although federal aid to Oakland amounts to only about 10% of total education revenues in the district, it has considerable impact. In the case of Detroit, however, even with the addition of state and federal funds, the end result is that total per pupil instructional expenditures are still highest in the predominantly white schools, as shown earlier in Figure 2.[13]

V. IMPACT OF TEACHER EDUCATION AND EXPERIENCE ON EXPENDITURE DIFFERENTIALS

Since teacher expenditure differentials are the major component in total per pupil disparities among types of schools, and since education and experience levels and pupil-teacher ratios have a significant impact on these differentials, this section briefly discusses these aspects.

In almost every district studied, more experienced, better educated teachers, and hence higher paid teachers, are located in the predominantly white, high income schools as compared with the predominantly black or low income schools.

Data from the Detroit school district, shown in Figure 11, illustrate the phenomenon found in most of the districts included in this study. Teachers with considerably higher experience levels are found in the white, middle class schools.

The differences in the proportion of experienced teachers is the major factor in average salary differentials among schools. However,

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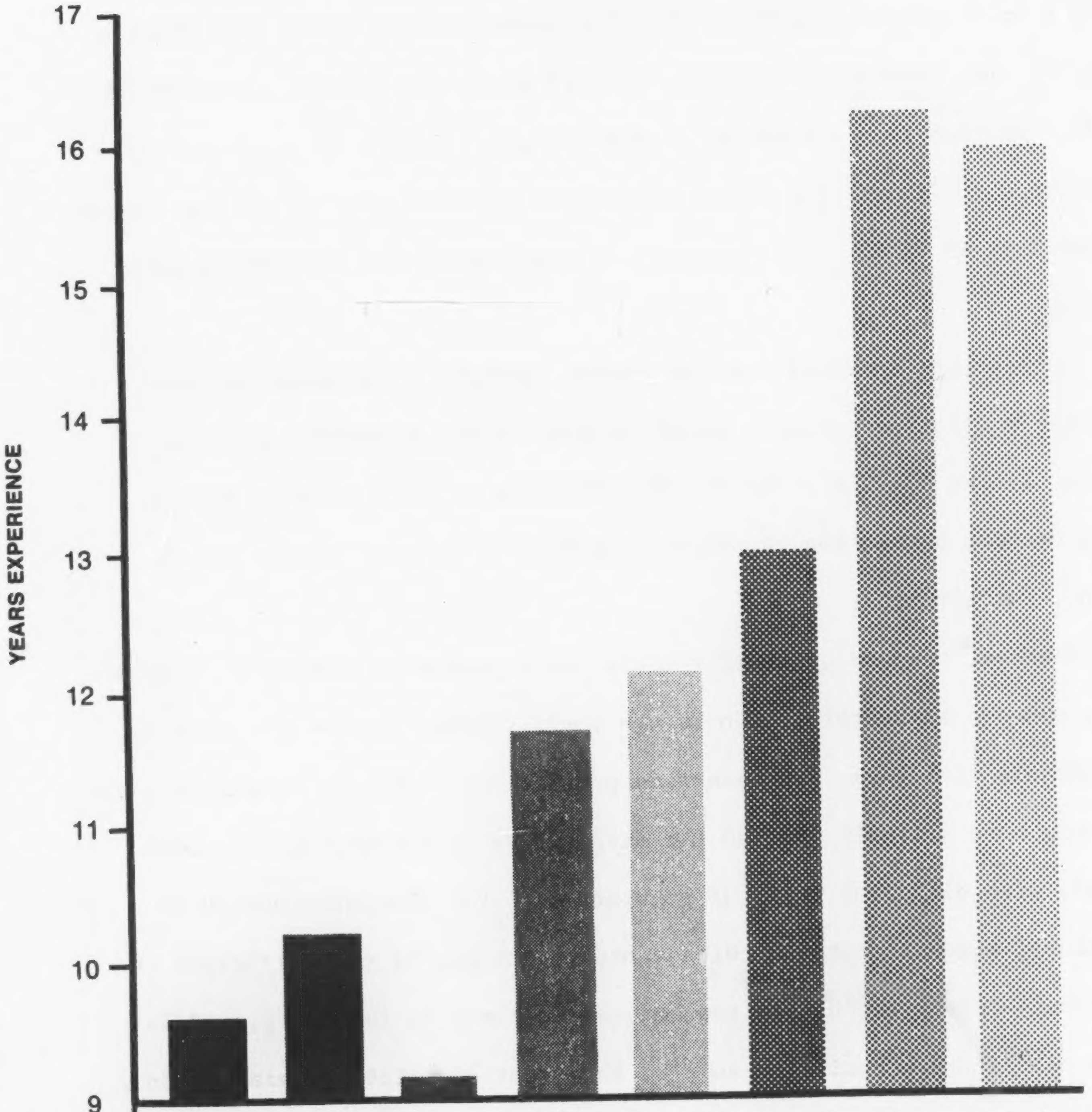
[13] One possible explanation for the differing patterns of compensatory aid distribution found in Oakland and Detroit is that the State of California has enacted a requirement that compensatory funds be concentrated on the most disadvantaged students. The rule provides that not less than $300 is to be spent per child above the amount normally spent on that child. There is no similar requirement in Michigan, at least as regards Title I of ESEA.

FIGURE 11

DETROIT AVERAGE TEACHER EXPERIENCE
(by Race)



education attainment levels follow the same pattern as the number of years of experience; these two factors seem to be closely interrelated.[14]

As previously noted in Section II of this chapter, there has been an effort to reduce pupil-teacher ratios in the disadvantaged schools through the use to a limited extent of district discretionary funds (see Figures 7 and 8) and, more significantly, through state and federal compensatory funds. Whether this reduction in pupil-teacher ratios in disadvantaged schools is sufficient to offset the higher education and experience levels of teachers in middle class schools is examined in the succeeding paragraphs.

Differences in pupil-teacher ratios, generally favoring the predominantly minority schools, exist in most of the districts studied. Figures 12 and 13 illustrate the distribution of pupil-teacher ratios among various categories of schools, grouped according to race and to income, in Detroit.

However, teacher expenditures are still higher in the white, middle class schools in Detroit, even though pupil-teacher ratios are lower in the schools with large disadvantaged populations. Efforts to reduce class size may have slightly reduced the disparities in expenditures between schools with different types of populations. Yet the introduction of additional teachers into the disadvantaged schools is not sufficient to completely offset the higher teacher expenditures in the white, middle class schools in Detroit and some of the other districts examined. In Flint and Oakland, on the other hand, the reduction in pupil-teacher ratios

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[14] This relationship has also been found in the inter-district analysis. (See Chapter II.)

Figure 12

DETROIT PUPIL/TEACHER RATIO
(by Race)

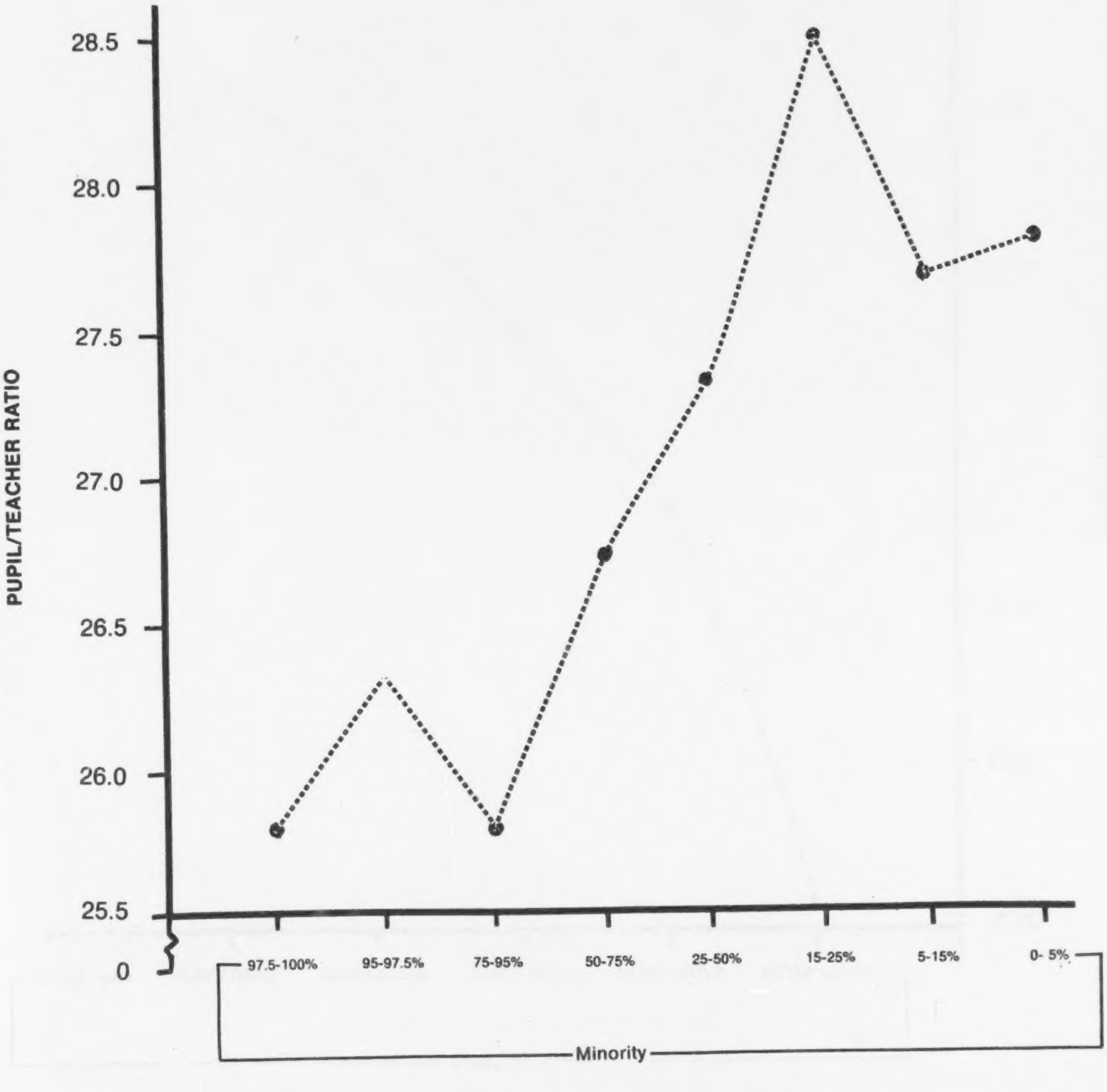
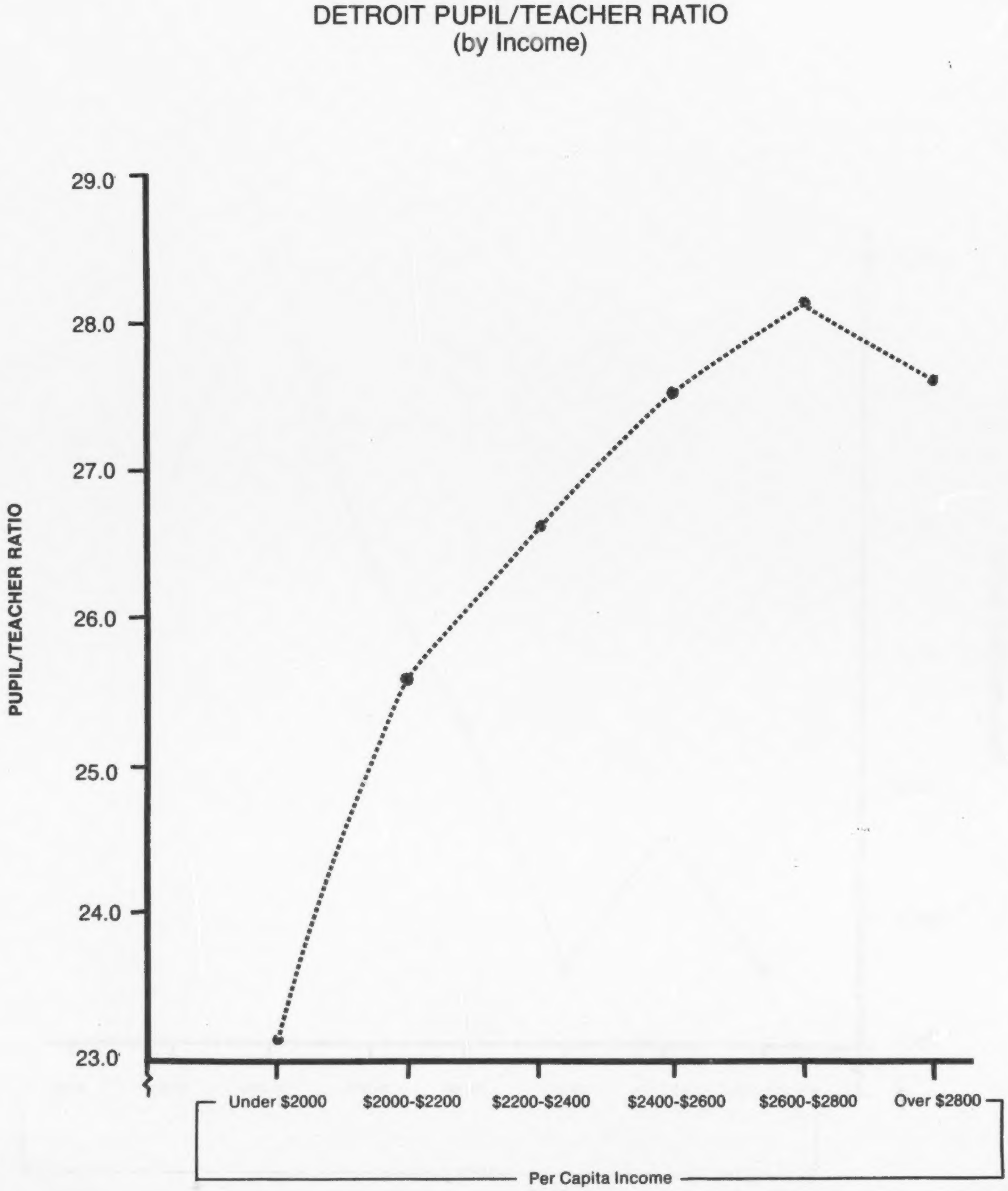


FIGURE 13


DETROIT PUPIL/TEACHER RATIO
(by Income)
29.0
28.0
27.0
26.0
25.0
24.0
23.0
PUPIL/TEACHER RATIO
Under $2000
$2000-$2200
$2200-$2400
$2400-$2600
$2600-$2800
Over $2800
Per Capita Income

appears to have been sufficient to counteract the higher average salary levels of the more educated and experienced teachers in the predominantly white schools. The result in these two districts is that per pupil expenditures are higher in those schools with high minority enrollment or low socio-economic status.

VI. FACTORS AFFECTING RESOURCE ALLOCATION PATTERNS

It has been shown in the preceding sections of this chapter that disparities in per pupil spending among schools within a district do exist. The distribution of district discretionary funds generally favors the white, middle class schools, primarily because of their higher proportion of teachers with advanced degrees and greater years of experience. Compensatory funds, largely by reducing pupil-teacher ratios, in some cases bring total expenditure levels for the poorest, highest minority schools up to the level of the white, middle class schools and, in the case of Oakland, even beyond the most advantaged schools. However, there are also districts such as Detroit, where even with compensatory resources, the poor, minority schools are spending below the highest income, white schools. Even in the two all white districts in Michigan, where race obviously is not a factor, the schools whose student population is from the lowest socio-economic level are spending less per pupil than other schools, even after federal compensatory funds are taken into account.

Schools in the middle ranges, in terms of ethnic composition and income levels, of nearly every district studied (with the exception of San

Jose[15]), receive fewer available resources.

Having documented these patterns of resource allocation within districts, this concluding section suggests some factors which may contribute to the differences in per pupil expenditures found among schools within a district.

It is clear from the analyses presented in the preceding sections that the major source of disparities in educational expenditures is the distribution of teachers within a district. Contractual obligations with teachers' unions, including involuntary transfer clauses, have required school boards to allow tenured teachers (with higher levels of experience and often higher education levels) to transfer to what they see as more favorable working conditions, i.e., white, middle class schools.[16]

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[15] Throughout this chapter, San Jose has been pointed out as an exception with regard to the allocation of resources from district discretionary funds. In that district, expenditures are higher in schools in the 10 to 50% minority category than in the schools in the predominantly white or predominantly minority category. (The distribution of compensatory funds, however, favors the high minority schools, bringing their total expenditures above the level of the other categories of schools.) Moreover, this middle group of schools has smaller pupil-teacher ratios and more educated, experienced teachers. Part of the explanation is due to size of schools. These schools are in an older area of the city and have the smallest number of students. (The oldest area of the city is that of the predominantly minority schools.) The predominantly white area is the more rapidly growing area of the city, which probably explains the high proportion of younger, less educated teachers in these schools.

[16] See, e.g., Agreement between the Board of Education of the School District of the City of Detroit and the Detroit Federation of Teachers, Local 231, July 1, 1969 - July 1, 1971, Article XII, Section F, pp. 21-22. Involuntary transfer clauses protect a teacher's privilege to work in the school of his or her choice unless that school loses enrollment and no longer requires the teacher's services. While some unions permit the concept of a "balanced staff" (the use of such criteria as race, experience, and education) in transfer policy, the operational use of this concept is limited by the union's insistence on seniority privileges for teachers and informal agreements with their respective school boards.

While these conditions are to some degree a result of biased distribution decisions on the part of school district administrators,[17] they are also the result of neighborhood characteristics and the atmosphere established by incumbent teachers.[18]

Another factor affecting the allocation of teacher resources is the deliberate policy decision on the part of certain school district administrators, particularly in the case of Detroit and Oakland, to mount an intensive recruitment effort to get more black teachers for predominantly black schools. This effort, partly in response to pressures from the black community, was undertaken to offset the imbalance in the ethnic composition of the staff, as well as for various educational reasons, such as providing role models for black students. The pool of applicants, consisting primarily of recent graduates from black colleges, meant an influx into these schools of inexperienced teachers without advanced degrees or the extra credits often accumulated during the course of a teaching career, and thus with lower salary levels.

The primary dependence of a school district upon local revenue, and thus the need of the district to please certain segments of the electorate whose political support is necessary to pass tax elections, may also be a factor influencing the distribution of resources in urban school districts. Since low income or minority communities generally have a lower election turnout than middle income, white communities, it is likely that school districts will cater more heavily to the desires of the latter (particularly since the majority of the total population is still white even in those districts where the majority of the student population is of a racial/ethnic minority). This means that until the districts become less dependent upon local revenues as a source of funds for education, it is unlikely that they will feel they can act with greater flexibility with regard to resource distribution policies.

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[17] This observation is based on interviews and analysis of the process of distribution in all of the districts in the sample.

[18] See, e.g., Havighurst, The Public Schools of Chicago, The Board of Education of the City of Chicago, 1964; Burkhead, Input and Output in Large City High Schools, 1964, pp. 35-38; Griffin, "Resource Allocation in Central City School Systems: A Case Study," Unpublished dissertation, Wayne State University, 1968.

Assuming that a desired goal is to equalize district discretionary fund expenditures, and to distribute compensatory money to the disadvantaged schools in such a way that it supplements the district fund expenditures rather than supplanting them,[19] there are a number of approaches that could be followed by a school district. (In nearly all of the districts studied, compensatory funds now are used to supplant district discretionary fund expenditures.)

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[19] Federal Regulation 116.17 (h), applying to Title I of the Elementary and Sectionary Education Act, states as follows.

> "Each application for a grant under Title I of the Act for educationally deprived children residing in a project area shall contain an assurance that the use of the grant funds will not result in a decrease in the use for educationally deprived children residing in that project area of State or local funds which in the absence of funds under Title I of the Act, would be made available for that project area and that neither the project area nor the educationally deprived children residing therein will otherwise be penalized in the application of State and local funds because of such a use of funds under Title I of the Act. No project under title I of the Act will be deemed to have been designed to meet the special educational needs of educationally deprived children unless the Federal funds made available for that project (1) will be used to supplement, and to the extent practical increase, the level of State and local funds that would in the absence of such Federal funds, be made available for the education of pupils participating in that project; (2) will not be used to supplant State and local funds available for the education of such pupils; and (3) will not be used to provide instructional or auxiliary services in project area schools that are ordinarily provided with State and local funds to children in nonproject area schools."

The most obvious approach would be a massive reassignment of the more highly paid teachers to the schools with low expenditures.[20] It is unlikely, however, that without changes in union contracts, most teachers who have the option -- the more experienced, better educated, and hence higher paid teachers -- will leave stable white neighborhood schools for the difficult environment of the ghetto school.[21]

The authors of this report question, however, whether the redistribution of teachers with advanced degrees and long years of experience is the only, or even the most appropriate, way to accomplish equalization. Interviews conducted in several of the districts included in this study indicate that some principals of low income, minority schools regard the transfer of certain teachers, who are experienced but unable to establish rapport with the children of these schools, as not being beneficial to their school's program. On the basis of interviews with district administrators, principals, teachers and parents, the general view is that massive reassignment of teachers in order to balance faculties in terms of experience and educational background would not benefit low income, minority children.

It might be possible to improve poor, minority schools to the point where teachers would find them as desirable as the other schools in the system, through smaller classes, better facilities, more preparation time, or incentive pay. This study can make no reasonable estimate as to how great an investment this would require. It is clear, however, that the amounts currently provided through state and federal compensatory funds have been insufficient to improve the schools to a point where teachers seek them out -- although as this chapter has shown, in most districts the compensatory funds are not enough even to bring the disadvantaged schools up to the same level as the white, middle class schools.

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[20] This was ordered by the court in Hobson v. Hansen, 327 F. Supp. 824, (1971).

[21] An alternative to reassigning teachers to overcome expenditure imbalance, as suggested by courts for racial imbalance, would be to shift disadvantaged students to the high expenditure schools.

Equalization of salaries is another possible approach, but could not be accomplished unless districts devised some method to compensate its teachers on some basis other than longevity. While consideration has been given to the idea of "merit" or "performance" pay, attempts to innovate in these areas are likely to meet with strong opposition from the teachers' organizations in all of the districts studied.

A third alternative, one that several districts in this study already appear to be approaching, although not on a scale sufficient to eliminate the disparities that now exist, is to drastically reduce pupil-teacher ratios in low income, minority schools. In view of the factors previously noted -- teachers' contracts and the lack of interest on the part of parents and administrators in the disadvantaged schools (and probably the pressures in opposition to such a move on the part of parents of children in high income, low minority schools) -- this could not be easily accomplished by transferring teachers from high income schools to the disadvantaged schools. Instead, the district would need to hire additional teachers in sufficient quantity, solely for the disadvantaged schools. The additional money which a poor district might receive under reform of the existing system of financing education might be earmarked for this purpose -- hiring additional teachers (or teacher aides) for schools with lower district discretionary fund expenditures, rather than increasing salaries of existing teachers. Of course the questions of whether small class size is equal to greater teacher experience and/or education, or indeed, whether either has an effect upon learning, remain to be answered.

A fourth alternative, one that also calls for additional funds, would be to provide special in-service training and assistance for teachers in disadvantaged schools.

As noted earlier in this section, one factor inhibiting school district administrators in reallocating resources may be their dependence on certain segments of the community for voter approval for local revenues. Education finance alternatives which provide for assumption by the state of a greater share of the responsibility for financing education, such as some of those described in Chapter III of this report, may provide administrators with greater flexibility of decision-making in the allocation of resources. However, it appears evident that in most districts, extra resources at present are distributed to poorer schools not so much due to district discretionary policy but to the availability of state and federal categorical funds that are restricted to expenditures in those schools. The fact that Oakland and San Jose, in a state which requires concentration of compensatory funds,[22/] provide considerably more resources for their poorest schools relative to their other schools than Detroit, in a state without a "concentration rule," serves to reinforce this conclusion.

In conclusion, if the expenditure patterns found in the seven districts are representative of those in other urban areas of the nation, it is essential that more comprehensive intra-district studies be conducted. It may be

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[22/] The $300 rule described in footnote 13.

necessary to examine the patterns within schools, that is, on a classroom by classroom basis, to fully understand the process of resource allocation. Further research must also be undertaken to determine the impact of class size and teacher characteristics on pupil performance.

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